

# Human Health and Ecological Risk Assessment

Main Installation  
Defense Depot Memphis Tennessee  
U.S. EPA ID # TN4210020570

Revision 1  
February 2020



# **Human Health and Ecological Risk Assessment**

Main Installation - Defense Depot Memphis, Tennessee

U.S. EPA I.D. Number TN4210020570



**Department of the Army**

**Prepared for:**



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## Table of Contents

|                                                                         |     |
|-------------------------------------------------------------------------|-----|
| Acronyms and Abbreviations .....                                        | vi  |
| 1 Introduction .....                                                    | 1-1 |
| 1.1 Background .....                                                    | 1-1 |
| 1.2 Scope of Work.....                                                  | 1-3 |
| 1.3 Report Organization .....                                           | 1-4 |
| 2 Site Description .....                                                | 2-1 |
| 2.1 Site Contamination.....                                             | 2-1 |
| 2.2 Geology and Hydrogeology.....                                       | 2-2 |
| 3 Sample Collection, Data Refinements and Identification of COPCs ..... | 3-1 |
| 3.1 Sample Collection .....                                             | 3-1 |
| 3.1.1 Groundwater Sampling & Analytical Data .....                      | 3-1 |
| 3.1.2 Data Usability .....                                              | 3-1 |
| 3.2 Data Refinement .....                                               | 3-2 |
| 3.2.1 General Data Refinements.....                                     | 3-2 |
| 3.2.2 Data Refinements using USEPA Core of the Plume Guidance .....     | 3-3 |
| 3.3 Identification of COPCs.....                                        | 3-3 |
| 4 Exposure Assessment .....                                             | 4-1 |
| 4.1 Conceptual Site Model .....                                         | 4-1 |
| 4.2 Receptors.....                                                      | 4-1 |
| 4.2.1 Current/Future On-site Worker .....                               | 4-2 |
| 4.2.2 Future On-site Resident (Adult and Child) .....                   | 4-3 |
| 4.3 Exposure Point Concentrations.....                                  | 4-3 |
| 4.3.1 Approach for EPC Calculations.....                                | 4-3 |
| 4.4 Chemical Exposure Intake .....                                      | 4-4 |
| 4.4.1 Exposure Factors .....                                            | 4-5 |
| 4.4.2 Age-Based Adjustments for Adult and Child .....                   | 4-7 |
| 4.4.3 Mutagen Adjustments for Early Life Exposure .....                 | 4-8 |
| 5 Toxicity Assessment .....                                             | 5-1 |
| 5.1 Sources of Toxicity Values.....                                     | 5-1 |
| 5.2 Evaluation of Non-Carcinogenic Effects.....                         | 5-1 |
| 5.3 Evaluation of Carcinogenic Effects .....                            | 5-2 |
| 5.4 Health Effects of COPCs.....                                        | 5-3 |
| 6 Hazard Identification and Risk Characterization .....                 | 6-1 |
| 6.1 Non-Carcinogenic Hazard Identification.....                         | 6-1 |
| 6.2 Carcinogenic Risk Characterization .....                            | 6-1 |
| 6.3 Risk Assessment Results.....                                        | 6-2 |
| 6.3.1 Fluvial Aquifer Evaluation.....                                   | 6-2 |
| 6.3.2 IAQ Evaluation .....                                              | 6-4 |
| 6.3.3 MAQ Evaluation .....                                              | 6-5 |
| 6.3.4 Comparison of Current Risks to the 2000 MI RI Risks.....          | 6-6 |
| 6.3.5 Vapor Intrusion Evaluation .....                                  | 6-7 |
| 6.4 Risk Assessment Summary .....                                       | 6-8 |
| 6.4.1 COC Summary by Aquifer and Receptor .....                         | 6-8 |

|   |       |                                                                                     |      |
|---|-------|-------------------------------------------------------------------------------------|------|
|   | 6.4.2 | Conclusions.....                                                                    | 6-9  |
| 7 |       | Uncertainty Analysis.....                                                           | 7-1  |
|   | 7.1   | HHRA Uncertainties.....                                                             | 7-1  |
|   | 7.2   | Background Data Sensitivity Analysis.....                                           | 7-2  |
|   | 7.3   | Resident Sensitivity Analysis .....                                                 | 7-3  |
|   | 7.3.1 | Fluvial Aquifer Evaluation.....                                                     | 7-3  |
|   | 7.3.2 | IAQ Evaluation .....                                                                | 7-4  |
|   | 7.3.3 | MAQ Evaluation .....                                                                | 7-4  |
|   | 7.4   | Groundwater Core of the Plume Sensitivity Analysis.....                             | 7-5  |
|   | 7.4.1 | Groundwater EPCs Calculated using Core of the Plume Data .....                      | 7-5  |
|   | 7.4.2 | Core of the Plume - Fluvial Aquifer .....                                           | 7-6  |
|   | 7.4.3 | Core of the Plume - IAQ .....                                                       | 7-8  |
|   | 7.4.4 | Core of the Plume Risk Summary .....                                                | 7-9  |
| 8 |       | Review of 2000 Soils HHRA .....                                                     | 8-1  |
|   | 8.1   | Overview and Soils HHRA Methodology.....                                            | 8-1  |
|   | 8.1.1 | Overview .....                                                                      | 8-1  |
|   | 8.1.2 | Soils HHRA Methodology .....                                                        | 8-1  |
|   | 8.2   | Soils HHRA Issues Considered in Current Review.....                                 | 8-2  |
|   | 8.2.1 | Background Concentrations .....                                                     | 8-2  |
|   | 8.2.2 | Dioxins/Furans .....                                                                | 8-3  |
|   | 8.3   | Review of Current Conditions using 2000 MI RI Data by FU .....                      | 8-9  |
|   | 8.3.1 | FU1.....                                                                            | 8-10 |
|   | 8.3.2 | FU2.....                                                                            | 8-10 |
|   | 8.3.3 | FU3.....                                                                            | 8-10 |
|   | 8.3.4 | FU4.....                                                                            | 8-11 |
|   | 8.3.5 | FU5.....                                                                            | 8-11 |
|   | 8.3.6 | FU6.....                                                                            | 8-11 |
|   | 8.4   | Review of Removal Actions Performed After 2000 MI RI in Current<br>Conditions ..... | 8-12 |
|   | 8.4.1 | Removal Action - Building 949 in FU4.....                                           | 8-12 |
|   | 8.4.2 | Removal Action - Parcels 35 & 28 in FU3 .....                                       | 8-13 |
|   | 8.5   | Conclusions.....                                                                    | 8-13 |
| 9 |       | Review of 2000 SLERAs.....                                                          | 9-1  |
|   | 9.1   | Overview and SLERA Methodology.....                                                 | 9-1  |
|   | 9.1.1 | Overview .....                                                                      | 9-1  |
|   | 9.1.2 | SLERA Methodology .....                                                             | 9-1  |
|   | 9.2   | SLERA Issues Considered in Current Review .....                                     | 9-4  |
|   | 9.2.1 | Scientific Management Decision Points .....                                         | 9-4  |
|   | 9.2.2 | Endangered Species/Habitat.....                                                     | 9-4  |
|   | 9.2.3 | Off-site Surface Water Transport .....                                              | 9-5  |
|   | 9.3   | SLERA Conclusions and Review of Current Conditions by FU .....                      | 9-5  |
|   | 9.3.1 | FU1.....                                                                            | 9-6  |
|   | 9.3.2 | FU2.....                                                                            | 9-7  |
|   | 9.3.3 | FU3.....                                                                            | 9-8  |
|   | 9.3.4 | FU4.....                                                                            | 9-9  |
|   | 9.3.5 | FU5.....                                                                            | 9-10 |
|   | 9.3.6 | FU6.....                                                                            | 9-10 |
|   | 9.3.7 | Dioxins/Furans .....                                                                | 9-11 |



|      |                                               |      |
|------|-----------------------------------------------|------|
| 9.4  | Conclusions.....                              | 9-12 |
| 10   | HHERA Conclusions and Recommendations .....   | 10-1 |
| 10.1 | Groundwater HHRA Update.....                  | 10-1 |
| 10.2 | Soil HHRA Review .....                        | 10-1 |
| 10.3 | SLERA Review.....                             | 10-1 |
| 10.4 | Detection Limits for Additional Sampling..... | 10-2 |
| 11   | References.....                               | 11-1 |

## Tables

|            |                                                                                  |      |
|------------|----------------------------------------------------------------------------------|------|
| Table 3-3  | Constituents of Potential Concern .....                                          | 3-5  |
| Table 6-1  | Worker's Exposure to Fluvial Aquifer Groundwater.....                            | 6-3  |
| Table 6-2  | Resident's Exposure to Fluvial Aquifer Groundwater .....                         | 6-3  |
| Table 6-3  | Worker's Exposure to IAQ Groundwater .....                                       | 6-4  |
| Table 6-4  | Resident's Exposure to IAQ Groundwater.....                                      | 6-5  |
| Table 6-5  | Worker's Exposure to MAQ Groundwater .....                                       | 6-5  |
| Table 6-6  | Resident's Exposure to MAQ Groundwater.....                                      | 6-6  |
| Table 7-1  | Comparison of Background Data to Screening Levels and DDMT-Related<br>Data ..... | 7-2  |
| Table 7-2  | Sensitivity Analysis: Resident's Exposure to Fluvial Aquifer Groundwater .....   | 7-3  |
| Table 7-3  | Sensitivity Analysis: Resident's Exposure to IAQ Groundwater .....               | 7-4  |
| Table 7-4  | Sensitivity Analysis: Resident's Exposure to MAQ Groundwater .....               | 7-5  |
| Table 7-5  | Core of Plume: Worker's Exposure to Fluvial Aquifer Groundwater.....             | 7-7  |
| Table 7-6  | Core of Plume: Resident's Exposure to Fluvial Aquifer Groundwater .....          | 7-7  |
| Table 7-7  | Core of Plume: Worker's Exposure to IAQ Groundwater .....                        | 7-8  |
| Table 7-8  | Core of Plume: Resident's Exposure to IAQ Groundwater.....                       | 7-9  |
| Table 8-1  | Cumulative Cancer Risks and Hazard Index Values in FU-2 Surface Soils.....       | 8-10 |
| Table 10-1 | Detection Limits for HHRA Groundwater COPCs.....                                 | 10-2 |
| Table 10-2 | Detection Limits for Soil COPCs.....                                             | 10-3 |
| Table 10-3 | Detection Limits for Soil Gas COPCs .....                                        | 10-4 |

## Tables (Attached)

|           |                                                       |
|-----------|-------------------------------------------------------|
| Table 3-1 | Monitoring and Injection Wells Used in the Assessment |
| Table 3-2 | Groundwater Samples Used in the Assessment            |

## Figures

|            |                                               |
|------------|-----------------------------------------------|
| Figure 1-1 | Unit Boundaries                               |
| Figure 2-1 | Site Location Map                             |
| Figure 2-2 | Groundwater Elevations in the Fluvial Aquifer |
| Figure 2-3 | Groundwater Elevations in the IAQ             |
| Figure 2-4 | Groundwater Elevations in the MAQ             |
| Figure 3-1 | Monitoring Well Locations                     |
| Figure 4-1 | Human Health Conceptual Site Model            |
| Figure 4-2 | Response Actions                              |

## Attachments

|                |                                                                   |
|----------------|-------------------------------------------------------------------|
| Attachment A-1 | RAGS Part D Planning Tables 0 to 7.3B                             |
| Attachment A-2 | Resident Sensitivity: RAGS Part D Planning Tables 4.Supp.4 to 7.6 |
| Attachment B   | ProUCL Software Inputs and Outputs                                |
| Attachment C   | Vapor Intrusion Screening Level Assessment                        |
| Attachment D   | Groundwater Core of the Plume Evaluation                          |
| Attachment E   | 2000 Groundwater Risk Assessment Excerpt                          |
| Attachment F   | Supporting Documentation for Review of 2000 HHRA Soils            |
| Attachment G   | Supporting Documentation for Review of 2000 SLERAs                |
| Attachment H   | Responses to EPA Comments and Conditional Approval Letter         |

## Acronyms and Abbreviations

|                 |                                                                       |
|-----------------|-----------------------------------------------------------------------|
| ADAF            | Age-dependent Adjustment Factor                                       |
| Army            | Department of the Army                                                |
| AT              | averaging time                                                        |
| BaP             | benzo(a)pyrene                                                        |
| BEHP            | bis(2-ethylhexyl) phthalate                                           |
| BERA            | Baseline Ecological Risk Assessment                                   |
| bgs             | below ground surface                                                  |
| BRAC            | Base Realignment and Closure                                          |
| BW              | body weight                                                           |
| C <sub>a</sub>  | constituent concentration in air                                      |
| CAF             | cancer adjustment factor                                              |
| CERCLA          | Comprehensive Environmental Response, Compensation, and Liability Act |
| CF              | chloroform                                                            |
| cm <sup>2</sup> | square centimeters                                                    |
| CNS             | central nervous system                                                |
| COC             | Constituent of Concern                                                |
| COPC            | Constituent of Potential Concern                                      |
| CSF             | Cancer Slope Factor                                                   |
| CSM             | Conceptual Site Model                                                 |
| CT              | carbon tetrachloride                                                  |
| CVOC            | chlorinated volatile organic compound                                 |
| DA-event        | dermally absorbed dose per event                                      |
| DDMT            | Defense Depot Memphis Tennessee                                       |
| DDT             | dichlorodiphenyltrichloroethane                                       |
| DOD             | Department of Defense                                                 |
| DQE             | data quality evaluation                                               |
| DQO             | data quality objective                                                |
| EBT             | enhanced bioremediation treatment                                     |
| ED              | exposure duration                                                     |
| EF              | exposure frequency                                                    |
| ELCR            | excess lifetime cancer risk                                           |
| EPC             | exposure point concentration                                          |
| FFA             | Federal Facilities Agreement                                          |
| FFS             | Focused Feasibility Study                                             |
| ft              | feet/foot                                                             |
| ft <sup>2</sup> | square feet                                                           |
| FU              | functional unit                                                       |
| GIABS           | gastrointestinal absorption factor                                    |
| HHRA            | Human Health Risk Assessment                                          |
| HI              | Hazard Index                                                          |
| HQ              | Hazard Quotient                                                       |
| IAQ             | Intermediate Aquifer                                                  |
| IARC            | International Agency for Research on Cancer                           |
| IR              | ingestion rate                                                        |
| IRIS            | Integrated Risk Information System                                    |
| IUR             | Inhalation Unit Risk                                                  |



|                   |                                              |
|-------------------|----------------------------------------------|
| J&E               | Johnson & Ettinger                           |
| kg                | kilogram                                     |
| L                 | liter                                        |
| L/day             | liter per day                                |
| LCS               | laboratory control sample                    |
| LDR               | Land Disposal Restrictions                   |
| LOAEL             | Lowest Observed Adverse Effects Level        |
| LTM               | long-term monitoring                         |
| LUC               | land use control                             |
| LUCIP             | Land Use Control Implementation Plan         |
| m <sup>3</sup>    | cubic meter                                  |
| MAF               | mutagen adjustment factor                    |
| MAQ               | Memphis Aquifer                              |
| MCL               | Maximum Contaminant Level                    |
| MDL               | method detection limit                       |
| µg/m <sup>3</sup> | micrograms per cubic meter                   |
| µg/kg             | micrograms per kilogram                      |
| µg/L              | micrograms per liter                         |
| mg/kg-day         | milligrams per kilogram per day              |
| mg/kg             | milligrams per kilogram                      |
| MI                | Main Installation                            |
| min               | minute                                       |
| MMOA              | mutagenic mode of action                     |
| MS                | matrix spike                                 |
| MSD               | matrix spike duplicate                       |
| NAVD              | North American Vertical Datum of 1988        |
| ng/L              | nanograms per liter                          |
| NLUR              | Notice of Land Use Restrictions              |
| NOAEL             | No Observable Adverse Effects Level          |
| ODEQ              | Oregon Department of Environmental Quality   |
| OLEM              | Office of Land and Emergency Management      |
| OSWER             | Office of Solid Waste and Emergency Response |
| OU                | operable unit                                |
| PAH               | polycyclic aromatic hydrocarbon              |
| PCB               | polychlorinated biphenyl                     |
| PCE               | tetrachloroethylene                          |
| PCP               | pentachlorophenol                            |
| ppb               | parts per billion                            |
| PPRTV             | Provisional Peer Reviewed Toxicity Values    |
| PRE               | preliminary risk evaluation                  |
| PRG               | Preliminary Remediation Goal                 |
| QAPP              | Quality Assurance Project Plan               |
| RAGS              | Risk Assessment Guidance for Superfund       |
| RAO               | Remedial Action Objective                    |
| RBC               | Risk-based Concentration                     |
| RME               | Reasonable Maximum Exposure                  |
| RfD               | Reference Dose                               |
| RfC               | Reference Concentration                      |

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| RI                       | Remedial Investigation                               |
| RL                       | reporting limit                                      |
| ROD                      | Record of Decision                                   |
| ROS                      | Regression on Order Statistics                       |
| RPD                      | recovery percent difference                          |
| RSL                      | Regional Screening Level                             |
| SLERA                    | Screening Level Ecological Risk Assessment           |
| SMDP                     | Scientific Management Decision Point                 |
| SRI                      | Supplemental Remedial Investigation                  |
| SVOC                     | semi-volatile organic compound                       |
| SWMU                     | Solid Waste Management Unit                          |
| TA                       | treatment area                                       |
| TCE                      | trichloroethylene                                    |
| TCDD                     | 2,3,7,8-tetrachlorodibenzo-pdioxin                   |
| TCDF                     | 2,3,7,8-tetrachlorodibenzofuran                      |
| TCP                      | trichlorophenol                                      |
| TDEC                     | Tennessee Department of Environment and Conservation |
| TDHE                     | Tennessee Department of Health and Environment       |
| TEF                      | toxic equivalency factor                             |
| TEQ                      | toxicity equivalent                                  |
| TIC                      | tentatively identified compound                      |
| TPH                      | total petroleum hydrocarbon                          |
| UCL                      | upper confidence limit                               |
| USACE                    | United States Army Corps of Engineers                |
| USEPA                    | United States Environmental Protection Agency        |
| UST                      | underground storage tank                             |
| VC                       | vinyl chloride                                       |
| VI                       | vapor intrusion                                      |
| VISL                     | Vapor Intrusion Screening Level                      |
| VOC                      | volatile organic compound                            |
| $\mu\text{g}/\text{m}^3$ | micrograms per cubic meter                           |
| $\mu\text{g}/\text{kg}$  | micrograms per kilogram                              |
| $\mu\text{g}/\text{L}$   | micrograms per liter                                 |

# 1 Introduction

HDR is pleased to submit this updated Human Health and Ecological Risk Assessment (HHERA) for potential groundwater exposures, including reviews of the HHRA for potential soil exposure and of the Screening Level Ecological Risk Assessments (SLERAs) for the Main Installation (MI) at the former Defense Depot Memphis, Tennessee (DDMT). The work was performed under Contract W91278-16-D-0061, Task Order 0002 to the United States Army Corps of Engineers (USACE), Mobile District.

The environmental restoration program at DDMT is directed by the Department of the Army (Army), Office of the Assistant Chief of Staff for Installation Management, Base Realignment and Closure (BRAC) Division. The regulatory oversight agencies are United States Environmental Protection Agency (USEPA) Region 4 and Tennessee Department of Environment and Conservation (TDEC). DDMT's USEPA Identification Number is TN4210020570.

Responses to EPA comments and EPA's conditional approval letter for this HHERA are included in [Attachment H](#).

## 1.1 Background

DDMT was added to the National Priorities List in 1992. In 1995, USEPA, TDEC, and the Army entered into a Federal Facilities Agreement (FFA; USEPA, 1995a) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act. The FFA outlines the process for investigation and cleanup of the Depot sites under CERCLA.

DDMT consists of operable units (OUs) 1 through 4:

- OU1, Dunn Field (not included in this HHERA);
- OU2, Southwest Quadrant MI;
- OU3, Southeastern Watershed and Golf Course; and
- OU4, North-Central Area MI.

In 1995, DDMT was listed for closure under BRAC; storage and distribution of material continued until the facility closed in September 1997. Responsibility for environmental restoration at DDMT transferred from the Defense Logistics Agency to the Army in December 2010.

A Remedial Investigation (RI) was conducted at the MI to evaluate the nature and extent of contamination and the risk to human health and the environment, and to identify the need for potential remedial actions at the Depot (MI RI). The MI RI report (CH2M HILL 2000) described previous investigations performed since 1982 to evaluate whether historical operations at the Depot have affected the environment and additional investigations conducted for the MI RI from 1996 to 1998.

The MI RI was conducted for CERCLA OUs 2, 3 and 4 and to meet specific requirements for property transfer under BRAC. The MI was divided into 35 parcels, each of which comprised a unit of property that would undergo leasing and ultimately transfer for private-sector use. Additional sampling was performed in some parcels to assess environmental conditions prior to transfer. BRAC parcels and the CERCLA sites were grouped into areas of similar past activity and similar future exposure, referred to as functional units (FUs). The MI was divided into six geographic FUs, each of which was studied separately. Groundwater under the entire MI was studied as the seventh FU. The boundaries of the three OUs and the six FUs are shown on [Figure 1-1](#).

Summary descriptions of the geographic FUs from the 2000 MI RI are provided below:

- FU1, the Twenty Typical Warehouses, consists of 20 nearly identical warehouses, each 120,000 square feet (ft<sup>2</sup>) in size, built primarily to store clothing and bulk food. One building was used formerly to store hazardous materials. There is no surface water in this unit. Past storage of industrial materials and chemicals was the suspected main source of constituents of potential concern (COPCs) in this FU.
- FU2, the Southeast Golf Course/Recreational Area, has two ponds and is mostly grass covered, has a small wooded area, and has relatively small buildings. The buildings are associated with the swimming pool, golf course, tennis courts, and volleyball courts.
- FU3, the Southwest Open Area, is entirely industrialized, consisting of several buildings, open storage areas, and railroad tracks. It is covered with coarse gravel, paved roads, and railroad tracks. It was used mostly for hazardous material storage and recoupment, sandblasting, painting activities, and vehicle cleaning and maintenance. Large warehouses were used to store hazardous materials such as flammables, corrosives, and waste oil.
- FU4, the Northern and Open Areas, consists of open storage areas lined with gravel or asphalt; railroad tracks; and administrative, maintenance, and general purpose warehouse buildings. Stored items include waste materials, hazardous waste, polychlorinated biphenyl (PCB) - and non-PCB-containing transformers, petroleum products, and other materials.
- FU5, the Newer Warehouses, consists of 13 buildings surrounded by asphalt, grass, and gravel, most of which are general-purpose warehouses used to store clothes, miscellaneous equipment, medical supplies, hazardous materials, waste petroleum product drums, waste oil, and material handling equipment. Railroads used for the transport of warehoused materials are adjacent to some of the buildings.
- FU6, the Administrative and Residential Areas, consists of asphalt parking areas and a few administrative buildings; there is some grass cover in the residential area within FU6. The former base housing area, consisting of Buildings 176, 179, 181, and 184, is located south of the administrative area. Soil surrounding the four residential buildings containing elevated levels of dieldrin was removed to allow early transfer of these buildings for continued residential use. Activities at other remaining buildings include those associated with vehicle maintenance shops, a service station, vehicle storage and maintenance, heating fuel storage, a vehicle grease rack, and a gas station. This FU

also includes a former building location that was used for storing and mixing pesticides and herbicides.

The land use on the MI has not changed significantly since the 2000 MI RI and remains primarily warehousing and light industrial. Some improvements were made following transfer to the local re-use agency, Depot Redevelopment Corporation. Railroad tracks were removed, some buildings were demolished for construction of Memphis Depot Parkway and landscaping was installed around warehouses. No new buildings have been constructed since the BRAC closure was completed in 1997.

The MI RI included baseline risk assessment conducted in two parts: a risk assessment of potential harm to human health (2000 HHRA) and a screening level risk assessment of potential harm to the site ecology (plants and animals) (2000 SLERA). Both human health and ecological risk assessments were performed for each FU.

The overall conclusion from the MI RI was that facility operations had not significantly affected the environmental media at the MI: surface soil, subsurface soil, sediment, surface water, air, and groundwater. Localized areas with limited contamination were identified and either had already been cleaned up or were planned to be cleaned up.

The results of contaminant nature and extent evaluations, fate and transport analyses and risk assessments showed that residences surrounding the MI were not being exposed to site-related contamination at levels presenting potential unacceptable risk. Also, with the exception of some areas of elevated lead in surface soil, on-site workers were not being exposed to unacceptable risks within the MI.

## 1.2 Scope of Work

HDR's primary task was to update the groundwater component of the 2000 HHRA. Secondary tasks were to review the soil component of the 2000 HHRA and the overall 2000 SLERAs to evaluate the conclusions against current conditions and guidance.

The purpose of the groundwater HHRA update is to evaluate potential exposures and define risks to public health and the environment related to groundwater within the MI. The groundwater HHRA update identifies COPCs and exposure media that may pose an unacceptable risk to current and/or future human receptors in support of an ongoing Supplemental Remedial Investigation (SRI) and planned Focused Feasibility Study (FFS). Since the original risk assessment in the 2000 MI RI was completed, changes in toxicity values, exposure factors and other risk assessment guidance have occurred, which may result in a change in calculated risks. These changes between the 2000 HHRA and the groundwater HHRA update are discussed further in the [Section 6](#), Hazard Identification and Risk Characterization.

The groundwater HHRA update is focused on current risk from COPCs in groundwater because the SRI and FFS are being conducted to reevaluate the selected groundwater remedy and to revise the remedy as needed to achieve remedial action objectives (RAOs).

The groundwater HHRA update was conducted in accordance with USEPA Risk Assessment Guidance for Superfund (RAGS, USEPA 1989), USEPA Region 4 Human Health Risk Assessment Supplemental Guidance (USEPA 2018c) and other relevant risk assessment guidance as referenced in this report. It identifies the current and future land use exposure pathways for human receptors that may be exposed to contaminants in groundwater. It presents cancer risks and non-cancer hazard quotients (HQs) for potential receptors for each COPC. COPCs that contribute the most to the cumulative cancer risks and non-cancer hazard indices (HI) are identified as constituents of concern (COC) in [Section 6](#), Hazard Identification and Risk Characterization.

## 1.3 Report Organization

This report is organized into the sections described below.

**Section 1 Introduction:** Identifies the background, scope and organization of this report.

**Section 2 Site Description:** Presents the site location, history, contamination, and features.

**Section 3 Sample Collection, Data Refinements and COPC Identification:** Describes the collection and preparation of data sets and the COPCs in the groundwater HHRA update.

**Section 4 Exposure Assessment:** Presents a Conceptual Site Model (CSM) for the groundwater HHRA update that identifies the exposure pathways and potentially exposed receptors and describes how exposure intakes are calculated.

**Section 5 Toxicity Assessment:** Provides a discussion of the toxicity values and the hierarchy by which they are chosen in the groundwater HHRA update.

**Section 6 Hazard Identification and Risk Characterization:** Provides a description of the carcinogenic classes and the methods by which cancer risks and non-cancer HQs are calculated and the results of the groundwater HHRA update.

**Section 7 Uncertainty Analysis:** Describes the inherent uncertainties in the groundwater HHRA update conclusions.

**Section 8 Review of 2000 Soils HHRA:** Provides an evaluation of the previously calculated soil risk estimates in the 2000 HHRA as compared to current guidance and toxicity values and a recommendation on whether or not it should be updated.

**Section 9 Review of 2000 SLERAs:** Provides an evaluation of the previously calculated SLERAs in the 2000 MI RI as compared to current guidance and toxicity values and a recommendation on whether or not they should be updated.

**Section 10 References:** Provides complete references for the literature cited in this report.

## 2 Site Description

DDMT is located in southeastern Memphis, Tennessee, Shelby County, approximately 5 miles east of the Mississippi River and northeast of Interstate 240 ([Figure 2-1](#)). It originated as a military facility in the early 1940s and received, warehoused, and distributed supplies common to all United States military services and some civil agencies located primarily in the southeastern US, Puerto Rico, and Panama. Stocked items included food, clothing, petroleum products, construction materials, and industrial, medical, and general supplies.

The property consists of approximately 632 acres identified as the MI and Dunn Field. The MI, which is the focus of this report, is approximately 567 acres and contained open storage areas, warehouses, former military family housing, and outdoor recreational areas. Dunn Field, located across Dunn Avenue from the northwest section of the MI, is approximately 65 acres and contained mineral storage and waste disposal areas.

### 2.1 Site Contamination

Past MI activities that could have resulted in the presence of hazardous materials in environmental media at the MI include hazardous substance repackaging for storage or shipment, pesticide application, painting and sandblasting, vehicle maintenance and hazardous material handling/storage. Other historical activities in open and enclosed storage areas included storing transformers with polychlorinated biphenyls, storing and using pesticides/herbicides, and treating wood products with pentachlorophenol (PCP). These activities resulted in the presence of metals, pesticides, and other less frequently detected chemicals in surface soil, surface water and sediment, and chlorinated volatile organic compounds (CVOCs) in groundwater.

RAOs for the MI were established in the Record of Decision (MI ROD; CH2M HILL 2001). The groundwater RAOs were:

- To prevent ingestion of water contaminated with volatile organic compounds (VOCs) in excess of maximum contaminant levels (MCLs) from potential future on-site wells;
- To restore groundwater to concentrations at or less than MCLs; and
- To prevent migration horizontally and vertically offsite of groundwater contaminants in excess of MCLs.

The groundwater remedy selected in the MI ROD was enhanced bioremediation treatment (EBT) with long-term monitoring (LTM) and land use controls (LUCs). The MI ROD stated EBT would target the most contaminated areas, and that untreated parts of the groundwater plume would degrade under natural attenuation. The MI Remedial Design (CH2M HILL 2004a) used groundwater concentrations of 100 micrograms per liter ( $\mu\text{g/L}$ ) for tetrachloroethene (PCE) and trichloroethylene (TCE) to define the limit of the treatment areas (TAs).



## 2.2 Geology and Hydrogeology

The geologic units of interest at DDMT are (from youngest to oldest): loess, including surface soil; fluvial deposits; Jackson Formation/Upper Claiborne Group; and Memphis Sand. The loess consists of brown to reddish-brown, low-plasticity clayey silt to silty clay. The loess deposits are about 20 to 30 feet (ft) thick and are continuous throughout DDMT.

The fluvial (terrace) deposits at DDMT consist of two general layers. The upper layer is silty, sandy clay to clayey sand and ranges from about 0 to 30 ft thick. The lower layer is composed of interlayered sand, sandy gravel, and gravelly sand, and ranges from 30 to 100 ft thick.

The uppermost aquifer is the unconfined Fluvial aquifer, consisting of saturated sands and gravelly sands in the lower portion of the deposits. The base of the Fluvial aquifer is the uppermost clay in the Upper Claiborne; the saturated thickness ranges up to 70 ft. The groundwater in the Fluvial aquifer is not used as a drinking water source; however, the current Tennessee groundwater classification at DDMT is General Use (TDEC, 0400-40-03).

The Jackson/Upper Claiborne forms the upper confining unit for the Memphis aquifer (MAQ) on a regional basis and separates the Fluvial aquifer from the MAQ at DDMT. The Upper Claiborne Group includes the Cockfield and Cook Formations. The individual formations of the Jackson/Upper Claiborne consist of clays, silts, and sands deposited in lenses or individual beds that are not aerially extensive. The Intermediate aquifer (IAQ) is locally developed in the Upper Claiborne sands. Where clay layers are thin or absent, a hydraulic connection or 'window' is created between the Fluvial aquifer and the IAQ, and potentially, the MAQ.

The MAQ consists of thick-bedded, white to brown or gray, very fine grained to gravelly sand. The Memphis Sand ranges from 500 to 890 ft thick, and begins at a depth below ground surface (bgs) of approximately 120 to 300 ft. The MAQ is a regional deep, confined aquifer and is the primary source of water for the City of Memphis. The nearest extraction wells are within the Allen Well Field, operated by Memphis Light, Gas and Water, and located approximately 1 mile west of the MI.

The groundwater elevations for the Fluvial aquifer, IAQ and MAQ are presented in [Figures 2-2 through 2-4](#). Groundwater elevations for the wells in each of these aquifers are provided in the April 2017 LTM Summary Report (HDR 2017b) and are referenced to the North American Vertical Datum of 1988 (NAVD). The elevation ranges on the MI from the April 2017 sampling event are 243.51 to 202.44 ft NAVD in the Fluvial aquifer, 219.06 to 175.30 ft NAVD in the IAQ and 175.03 to 173.56 ft NAVD in the MAQ. Groundwater in the Fluvial aquifer flows onto the MI from all sides and migrates vertically to the IAQ through the window in the northwest MI and the sink in the south-central MI.

The MI site terrain is relatively level, with elevations ranging from 282 to 300 ft NAVD. There are only two surface water bodies on DDMT; Lake Danielson and the golf course pond. No perennial streams, flood-prone areas or wetlands occur within the Depot. The lake and pond are fed by storm water runoff and are too shallow to intercept the Fluvial aquifer.



## 3 Sample Collection, Data Refinements and Identification of COPCs

Data from groundwater samples collected by HDR from 2012 to 2017 were used to quantitatively evaluate potential human exposures to contaminants in order to assess current conditions and groundwater quality for this update to the 2000 HHRA. All data were refined for use in the risk assessment in accordance with USEPA guidance (USEPA 1992).

### 3.1 Sample Collection

#### 3.1.1 Groundwater Sampling & Analytical Data

Field activities and laboratory analyses were performed in accordance with the *Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Revision 0* (2011 QAPP; HDR 2011).

Groundwater samples from 161 monitoring and EBT injection wells on the MI were used to assess groundwater quality for this update. The wells used for this assessment are listed on [Table 3-1](#), and all MI monitoring wells are shown on [Figure 3-1](#). Samples collected from 17 background wells (MW-16, 19, 23, 24, 53, 55, 93, 99, 102B, 272, 274, 275, 276, 277, 278, 282 and 283) and from 8 off-site wells (MW-47, 48, 53, 66, 66A, 72, 275 and 278) were excluded from this groundwater HHRA update as they do not represent impacts from historic site activities. A discussion of the analytical data for the background locations is provided in [Section 7.2](#).

A total of 1,424 groundwater field samples were collected on the MI from 2012 to 2017; 1,159 samples were collected from 129 wells in the Fluvial aquifer, 244 samples from 29 wells in the IAQ and 21 samples from 3 wells in the MAQ. Samples from the 161 wells were collected on different frequencies (semiannual to biennial), as described in the LTM reports. The list of groundwater samples used for this assessment is shown on [Table 3-2](#).

Samples were sent to Microbac Laboratories in Marietta, Ohio for VOC analysis by Method SW8260B. Review of the quality of the analytical data was performed to ensure project data quality objectives were met. The data quality evaluation (DQE) is provided in the LTM reports. The DQE for the most recent sampling event is provided in the April 2017 LTM Summary Report (HDR 2017b).

#### 3.1.2 Data Usability

The groundwater data from the 2012 to 2017 LTM sampling events at the MI were reviewed for data quality in the annual LTM reports and it was determined the data sets met the data quality objectives (DQO) of the 2011 QAPP and are of sufficient quality to support the evaluation of remedial actions. The data were assessed for precision, accuracy, representativeness, comparability, completeness and sensitivity with minor issues as noted below.

The 2012 data set (HDR 2013) had elevated laboratory control sample (LCS) recoveries and low matrix spike (MS) and matrix spike duplicate (MSD) recoveries for the accuracy DQO; the data are qualified J or UJ and remain valid (HDR 2013). For the sensitivity DQO, the analytical reporting limits (RL) and method detection limits (MDLs) were compared to groundwater protection standards [i.e., lowest of USEPA Federal MCLs and USEPA Region 9 Preliminary Remediation Goals for Tapwater (now merged into the national USEPA Regional Screening Levels, RSLs)] and six VOCs (1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,2-dichloroethane, bromodichloromethane, carbon tetrachloride, and dibromochloromethane) have MDLs greater than these standards, as noted in the 2011 QAPP, which states analytical method technology cannot achieve MDLs lower than those listed. Laboratory-established MDLs are updated annually per analytical method and matrix; the RLs remained unchanged for the duration of the project (HDR 2011).

The 2013 to 2016 data sets also have elevated LCS and low MS/MSD recoveries that result in some of the data being qualified as J or UJ; with the same VOCs with MDLs above the groundwater protection standards as identified in the 2011 QAPP, noted above (HDR 2014, 2015, 2016, 2017a).

The 2015 data set, related to compliance with the precision DQO, has one field duplicate pair at sampling location MW-92 with recovery percent differences (RPDs) above the control limit for cis-1,2-DCE, TCE, PCE and VC (HDR 2016). For the sensitivity DQO, some sample results are reported as non-detect with elevated RLs for two common laboratory contaminants, i.e., acetone and methylene chloride.

The 2016 data set, as related to the sensitivity DQO has limited sample results reported as non-detect with elevated RLs; these are for acetone and methylene chloride (HDR 2017a).

The 2017 data set, pertaining to the precision DQO, has one field duplicate pair at sampling location PMW-101 with RPDs above the control limit for PCE and methyl tert-butyl ether (HDR 2017b). Related to the sensitivity DQO, the RLs and MDLs are below the groundwater protection standards (Federal MCLs), in the LTM report (HDR 2017b) and the DDMT *Uniform Federal Policy-Quality Assurance Project Plan, Revision 1* (DDMT QAPP, HDR 2018).

## 3.2 Data Refinement

Data were reviewed in LTM and EBT performance monitoring reports in accordance with the 2011 QAPP and determined to be of appropriate quality for use in the remedial action and risk assessments. The groundwater data were further refined for use in the groundwater HHRA update.

### 3.2.1 General Data Refinements

In accordance with *USEPA Guidance for Data Useability in Risk Assessment (Part A)* (USEPA 1992) data are refined as follows:

- Chemical concentrations qualified as not detected (i.e., U-qualified data) are evaluated as non-detects. Concentrations qualified as estimated (i.e., J-qualified data) are included, while rejected (R-qualified) data are not used in risk calculations.

- The method detection limit is used to represent non-detect results; if not available, the reporting limit is used. No sample quantitation limits are identified in the data set. The non-detects are evaluated using ProUCL software and the value assigned to them is dependent upon the data distribution using the following methods. ProUCL applies the Regression on Order Statistics (ROS) methods for lognormal and gamma distributed data sets to provide a better estimate of the non-detected sample's true value based on actual detected concentrations. For normal distributions, ProUCL utilizes Kaplan-Meier estimates in lieu of the ROS methods because the ROS methods tend to yield biased and negative non-detect values for these distributions (USEPA 2015b and c).
- The results of the field duplicate samples were compared to the results of the associated parent sample and were consolidated into the data set by using the maximum result if constituents are detected in both the original and duplicate samples. The detected value is used when one result was detected and the other is reported as non-detect.
- The concentrations of m,p-xylene and o-xylene isomers are evaluated individually instead of summing the results to calculate a result for the total.

### 3.2.2 Data Refinements using USEPA Core of the Plume Guidance

Certain groundwater data are refined to meet the requirements in USEPA memorandum *Determining Groundwater Exposure Point Concentrations, Supplemental Guidance* (referred to herein as “Core of the Plume” (USEPA 2014a). The memorandum specifies which groundwater data are acceptable for lessening the variability that occurs in calculating conservative exposure point concentrations (EPCs) and includes requirements on the type of well sample (e.g., monitoring well) and data quality (e.g., low turbidity). In accordance with this guidance, data from samples collected from piezometer wells (i.e., PZ-03) are excluded from the groundwater data set, as the data may not be reproducible.

Further discussion on the evaluation of data using the Core of the Plume guidance is described in [Section 7.4](#).

## 3.3 Identification of COPCs

The COPC screening tables are presented in the format of RAGS Part D Planning Tables (USEPA 2001) in [Attachment A-1](#), RAGS Part D Planning Tables. Attachment A-1, [Table 2.1](#) presents the COPC screening of groundwater in each aquifer: Fluvial, Intermediate/Upper Claiborne and Memphis.

COPCs were determined in accordance with the criteria included in Chapter 5 of USEPA RAGS Part A (USEPA 1989) and USEPA Region 4 Human Health Risk Assessment Supplemental Guidance (2018c) as follows:

- Constituents are excluded from the COPC list if they are essential nutrients and are present at levels not likely to pose appreciable risk to human health. Chemicals that are considered to be essential nutrients include iron, calcium, chloride, magnesium, potassium and sodium (USEPA 1989). No essential nutrients were identified here as the

analytical results from 2012 – 2017 indicate primarily VOCs and some semi-volatile organic compounds (SVOCs) were detected.

- Analytical data that are not chemical-specific, e.g., total organic carbon, were excluded from the COPC list. Various acids (e.g., acetic, propionic, butyric) were excluded from the COPC list after determination that toxicity values are not available in USEPA Integrated Risk Information System (IRIS) and the acids are by-products of the sodium lactate injected for the EBT remedy.
- Tentatively identified compounds (TICs) were excluded from the COPC screening as the identity and concentration of TICs are uncertain without further analyses that were not performed.
- No constituents were eliminated based on frequency of detection (USEPA 2018c).

For the remaining constituents, the maximum detected concentrations of the constituents detected in groundwater were compared to the Federal MCLs (USEPA 2017; USEPA 2019b) and USEPA RSLs for Residential Tapwater at a target cancer risk of 1E-06 and target non-cancer HQ of 0.1 (USEPA 2019b).

If the maximum detected concentration of a constituent was less than the screening level, it was eliminated as a COPC, as it is assumed it will not contribute significantly to potential unacceptable risk (USEPA 1989). Constituents without a screening level were retained for further quantitative evaluation in the groundwater HHRA update. If the maximum detected concentration of a constituent was greater than the screening level, it too was carried through as a COPC in the groundwater HHRA update. Exceedances of screening levels do not in themselves indicate that an unacceptable exposure exists. Rather, the exceedance of a screening level indicates the need for further evaluation in the groundwater HHRA update.

The COPC screening identified 30 COPCs in the groundwater aquifers. Of these COPCs, all of the COPCs were identified in the Fluvial aquifer, 9 COPCs in the IAQ and 4 COPCs in the MAQ. The COPCs are presented in [Table 3-3](#) below as well as in Attachment A-1, RAGS Part D Planning [Table 2.Supp.1](#).

**Table 3-3      Constituents of Potential Concern**

| COPC                             | Fluvial Aquifer | IAQ | MAQ |
|----------------------------------|-----------------|-----|-----|
| 1,1,2,2-Tetrachloroethane        | X               | X   |     |
| 1,1,2-Trichloroethane            | X*              |     |     |
| 1,1-Dichloroethane               | X*              |     |     |
| 1,1-Dichloroethene               | X               |     |     |
| 1,2,3-Trichloropropane           | X               |     |     |
| 1,2,4-Trichlorobenzene           | X*              |     |     |
| 1,2,4-Trimethylbenzene           | X               |     |     |
| 1,2-Dichloroethane               | X               |     |     |
| 1,2-Dichloropropane              | X               | X*  |     |
| 1,3,5-Trimethylbenzene           | X*              |     |     |
| 1,4-Dichlorobenzene              | X*              |     |     |
| 2-Hexanone                       | X*              |     |     |
| 4-Isopropyltoluene               | X*              |     |     |
| Acetone                          | X               |     |     |
| Benzene                          | X*              |     |     |
| Bromodichloromethane             | X*              |     |     |
| Bromomethane                     | X*              |     |     |
| Carbon tetrachloride (CT)        | X               | X   | X   |
| Chloroform (CF)                  | X               | X   | X   |
| Chloromethane                    | X*              |     |     |
| cis-1,2-Dichloroethylene         | X               | X   |     |
| Ethylbenzene                     | X*              |     |     |
| Methyl Ethyl Ketone (2-butanone) | X               | X   |     |
| Methyl tert-butyl ether          | X               |     |     |
| Methylene chloride               | X               |     |     |
| PCE                              | X               | X   | X   |
| Toluene                          | X               |     |     |
| TCE                              | X               | X   | X   |
| Vinyl chloride (VC)              | X               | X   |     |
| Naphthalene*                     | X*              |     |     |

Note: COPCs marked with a \* are detected at less than five percent in the groundwater data set.

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## 4 Exposure Assessment

The objective of the exposure assessment is to estimate the magnitude, frequency, duration and routes of current and reasonably anticipated future human exposure to COPCs associated with DDMT. The exposure assessment is based on the receptor scenarios for DDMT-related COPCs via site-specific routes of exposure.

The standard default exposure factors recommended by USEPA for estimating reasonable maximum exposure are used where available. Where standard default exposure factors are not available for an exposure pathway, the evaluation is conducted using similarly conservative exposure factors that are based on site-specific considerations and professional judgment to assure protectiveness.

This section presents a CSM ([Figure 4-1](#)) that identifies the exposure pathways and the potentially exposed receptors. It also describes the receptors and exposure pathways and if they will be evaluated quantitatively and qualitatively and the rationale for each chosen pathway.

### 4.1 Conceptual Site Model

The CSM is a dynamic tool for understanding DDMT conditions and potential exposure scenarios for human receptors that may be exposed to DDMT-related contamination. An exposure pathway consists of:

- A source (e.g., storage of hazardous materials) and mechanism of constituent release from source;
- A retention or transport medium (e.g., groundwater) for the constituent;
- A point of contact (e.g., drinking water) between the human receptor and the medium; and
- A route of exposure (e.g., ingestion) for the potential human receptor at the contact point.

An exposure pathway is considered complete only if all four components are present. In this groundwater HHRA update, only complete exposure pathways are evaluated quantitatively. A schematic presentation of the CSM is included as [Figure 4-1](#) and in a tabular format in Attachment A-1, RAGS Part D Planning [Table 1](#).

### 4.2 Receptors

Potential receptors are defined as human populations that are subject to contaminant exposure. Both current and future land and water use conditions are considered when determining exposure scenarios.

The property is currently used for commercial warehousing and light manufacturing in accordance with its light industrial zoning. DDMT is located in an area of mixed residential,

commercial and industrial land use. The surrounding area contains small commercial and manufacturing uses to the north and east and single-family residences to the south and west. Airways Boulevard, located on the east border of the MI, is the most heavily traveled thoroughfare in the vicinity and is developed with numerous small, commercial establishments, particularly in the area from DDMT south to the Interstate 240 interchange.

Site-wide LUCs have been implemented to prevent residential land use, daycare facilities, drilling and groundwater use, as well as to control site access, except for a portion of the eastern parcel of DDMT, which is available for unrestricted use – see [Figure 1-1](#). LUCs are being implemented through deed and lease restrictions, zoning regulations, a Notice of Land Use Restrictions (NLUR) recorded in January 2005, and annual inspections since 2005. The *Main Installation Interim Remedial Action Completion Report, Revision 1* (HDR|e2M 2010) was approved by USEPA in March 2010. The 2017 *Main Installation Annual Land Use Control Inspection Report* (HDR 2017c) was submitted to USEPA and TDEC on 8 August 2017; no deficiencies or violations of the LUCs were identified in that report.

The following potential receptors are identified: current/future on-site worker (composite of an indoor and outdoor worker) and future on-site resident adult and child. These receptors are depicted in diagram format on [Figure 4-1](#) and in tabular format in Attachment A-1, RAGS Part D Planning [Table 1](#).

#### 4.2.1 Current/Future On-site Worker

The future on-site worker is assumed to include employees that perform activities indoors and outdoors. They are involved with future non-intrusive indoor and outdoor activities, such as landscape maintenance and owner/tenant operations.

Contamination is present in the Fluvial and Intermediate/Upper Claiborne aquifers and there is potential for contamination to migrate to the deeper MAQ, which serves as a current source of drinking water. Ingestion and dermal contact with tapwater will be evaluated for a current/future worker, assuming no controls are in place to prohibit exposure to contaminated groundwater.

Exposure assumptions are based on default values representing Reasonable Maximum Exposure (RME) conditions for chronic exposures, based on methods included in EPA's Risk Assessment Guidance for Superfund (RAGS), Part B Manual (1991) and additional guidance. The National Contingency Plan (NCP) encourages protection of ground water to its greatest beneficial use; if it is suitable as a potable water source, risk assessment is to be based on residential use as the assumed most exposed receptor.

Inhalation of COPCs by workers from exposure to tapwater (e.g., from hand washing and drinking) during the work day is considered insignificant as compared to the exposure associated with longer time periods spent, for example, living in a home and the greater level of volatilization and inhalation of contaminants during a shower.

Inhalation via vapor intrusion (VI) by workers and residents is evaluated using the USEPA Vapor Intrusion Screening Level (VISL) calculator and Johnson & Ettinger (J&E) model as discussed in [Section 6.3.5](#).



A construction worker's exposure to groundwater seeping in to trenches is expected to be limited to small amounts of perched water within the clayey soils that extend to at least 20 ft bgs. The depth to water in the shallow Fluvial aquifer ranges from 55 to 100 ft bgs on the MI. Therefore, this receptor is not included in this update.

#### 4.2.2 Future On-site Resident (Adult and Child)

Redevelopment of DDMT for future residential land use is not expected, as it is continuing to be used for industrial purposes, and LUCs have been implemented to prevent building of residences and installation of wells over the majority of DDMT. However, there is potential for contamination to migrate to the MAQ. In addition, the USEPA memorandum titled *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions* (USEPA 1991a) requires the assumption of no treatment of the water source and no institutional (e.g., restrictive ordinances) or engineering (e.g., point of entry treatment) controls in identifying routes of exposure.

Therefore, a future on-site resident was evaluated in this groundwater HHRA update. Risks potentially associated with ingestion and dermal contact of COPCs from tapwater and the inhalation of VOCs during showering were evaluated for this receptor.

### 4.3 Exposure Point Concentrations

Developing estimates of COPC concentrations at points of potential human exposure is necessary to evaluate chemical intakes by potentially exposed individuals. The concentrations of chemicals in the exposure medium at the exposure point are termed "exposure point concentrations". EPCs are determined as detailed below.

#### 4.3.1 Approach for EPC Calculations

The EPC for the groundwater HHRA update is defined as the 95 percent upper confidence limit (UCL) of the lower of the arithmetic mean or maximum observed concentration of an individual COPC, in each aquifer considered and assuming no treatment prior to exposure. Calculation of the 95% UCL is conducted in accordance with USEPA guidance (USEPA 2002; 2015b and c). The ProUCL software package, version 5.1 is used to determine the underlying statistical distributions and EPCs.

EPCs were calculated for groundwater as follows:

- Site-wide Fluvial aquifer groundwater for a worker and resident's exposure;
- Site-wide IAQ groundwater for a worker and resident's exposure; and
- Site-wide MAQ groundwater for a worker and resident's exposure.

The EPCs for each medium in the exposure assessment are presented in Attachment A-1, RAGS Part D Planning [Tables 3.1](#) through [3.3](#). [Table 3.1](#) presents the EPCs for the Fluvial aquifer, [Table 3.2](#) for the IAQ and [Table 3.3](#) for the MAQ. The supporting ProUCL data input and outputs are provided in [Attachment B](#).

## 4.4 Chemical Exposure Intake

The EPCs were used in combination with exposure factors from USEPA guidance and standard default parameters (USEPA 2011a) to estimate chemical intake via each exposure pathway for each receptor. Some default exposure factors have been updated in the 2014 USEPA Office of Solid Waste and Emergency Response (OSWER, now Office of Land and Emergency Management, OLEM) Directive 9200.1-120 (USEPA 2014b); these values were incorporated.

Chemical intake is expressed in terms of milligrams of chemical per kilogram of body weight per day (mg/kg-day), using the following general equation, which is adjusted based on the exposure pathway and medium:

$$Intake = \frac{EPC \times IR \times EF \times ED}{BW \times AT}$$

Where:

- Intake = daily intake or exposure dose (mg/kg-day)
- EPC = exposure point concentration of COPC (µg/L)
- IR = ingestion rate; the amount of contaminated medium ingested over the exposure period (liters per day [L/day])
- EF = exposure frequency; describes how often exposure occurs (days/year)
- ED = exposure duration; describes how long exposure occurs (years)
- BW = body weight; the average body weight over the exposure period (kg)
- AT = averaging time; period over which exposure is averaged (days)

Each of the intake variables in the above equation consists of a range of values taken from *RAGS, Part A through F* (USEPA 1989; USEPA 2009) and other applicable risk guidance, e.g., the *Exposure Factors Handbook* (USEPA 2011a). The exposure factors and intakes for receptor population groups for each exposure pathway are presented in Attachment A-1, RAGS Part D Planning [Table 4.1](#) and are summarized below. Attachment A-1, [Table 4.1](#) describes in more detail the exposure factors and equations for pathways related to groundwater exposure scenarios. Supplemental values for the exposure factors are presented in Attachment A-1, [Tables 4.Supp.1 to 4.Supp.3](#).

This HHRA presents the risk estimates for a resident's dermal and inhalation pathways using the USEPA Region 4 methodology, which assumes that the risk estimates for inhalation and dermal exposure from a resident showering is equivalent to exposure from the daily ingestion of 2.5 L of contaminated water per day (with supporting tables provided in [Attachment A-1](#)). The risk estimates resulting from use of the national USEPA methodology (USEPA 2018c) are presented in [Section 7.3](#), Resident Sensitivity Evaluation, as part of the uncertainties discussion (with supporting tables provided in [Attachment A-2](#)). The Core of the Plume Sensitivity analysis is presented in [Section 7.4](#), using the national methodology (with supporting tables included in [Attachment D](#)).

#### 4.4.1 Exposure Factors

The AT for cancer risk and BW are the same for all exposure pathways, as follows:

- The AT for evaluating cancer risk is equal to a lifetime of 70 years or 25,550 days (USEPA 2014a). The AT for evaluating non-cancer HQs is equal to the ED, which varies by receptor (USEPA 2014a).
- The body weight of 80 kg is the standard USEPA-recommended body weight for assessing exposure to adults; a body weight of 15 kg is used for children (0 to 6 years; USEPA 2014a).

##### 4.4.1.1 Ingestion Pathway of Exposure

- *Ingestion Rate*

The IR of groundwater via tapwater by a worker is 1.25 L/day, which is assumed to be half of an individual's daily water intake (i.e., a resident's IR; USEPA 2014a FAQs).

Residents are assumed to drink 2.5 L/day of tapwater as an adult and 0.78 L/day as a child (0 to 6 years), which are weighted averages of 90<sup>th</sup> percentile values for ingestion of drinking water (USEPA 2014a).

- *Exposure Duration and Frequency*

The worker is assumed to be exposed to contaminants in tapwater for 250 days/year for 25 years (USEPA 2014a; USEPA 2019b).

Resident adults are assumed to ingest groundwater-derived tapwater 350 days/year for 20 years (USEPA 2019b). The same EF of 350 days/year is also applied to a resident child, for 6 years (USEPA 2014a; USEPA 2019b).

##### 4.4.1.2 Dermal Contact Pathway of Exposure

The dermal contact pathway of exposure for an industrial worker and adult and child resident were evaluated using the exposure factors in [Attachments A-1, A-2 and D](#), and described below.

- *Skin Surface Area*

The skin surface area available for contact with water for a worker is 3,527 square centimeters (cm<sup>2</sup>), which is based on the weighted average of mean values for head, hands and forearms (male and female, 21+ years, USEPA 2014a).

The skin surface area available for contact with water during showering for a resident is 19,652 cm<sup>2</sup> for an adult and 6,365 cm<sup>2</sup> for a child (0 to 6 years), which are weighted average of mean values for total surface area of the whole body (USEPA 2014a). These values are greater than the skin surface area for contact with surface water, as it is assumed there will be more skin exposure to water during showering.

- *Absorbed Dose per Event in Water*

The dermally absorbed dose per event (DA-event) from water contact is calculated using default equations and values presented in *RAGS Part E* (USEPA 2004). Chemical-

specific dermal factors incorporated in the calculation include dermal permeability constant ( $K_p$ ), ratio of permeability coefficients ( $B$ ), lag time per event ( $\tau$ -event), time to reach steady state ( $t^*$ ) and fraction absorbed water ( $FA$ ). The calculations of DA-event for each aquifer and receptor scenario are presented in Attachment A-1, RAGS Part D Planning [Tables 4.Supp.3A](#) through [3C](#).

- *Exposure Duration and Frequency*

The ED and EF for each scenario is the same as those identified for the ingestion pathway above.

- *Event Duration (t-event) and Frequency*

The event frequency is assumed to be one event/day for all exposures (USEPA 2004).

The t-event is 1 hour for a worker, which assumes hand washing during breaks and meals.

The t-event for a resident showering is assumed to be 0.71 hour/event for an adult and 0.54 hour/event for a child, which are weighted averages of the 90<sup>th</sup> percentile spent bathing or showering in a day (USEPA 2014a).

#### 4.4.1.3 Inhalation Pathway of Exposure

As noted in [Section 4.2](#), potential risks related to the VI pathway have been evaluated separately using the EPA VISL calculator; see [Section 6.3.5](#).

The following refers to residential exposure during showering. As noted in the dermal pathway discussion above, the USEPA Region 4 methodology of assuming that the risk estimates for dermal/inhalation exposures are equivalent to those attributable to ingestion exposures was utilized (with supporting calculations provided in [Attachment A-1](#)). In comparison, the risk estimates using national USEPA methodology are presented in [Section 7.3](#), Resident Sensitivity Evaluation, as part of the uncertainties discussion (with supporting calculations in [Attachment A-2](#)). The exposure factors used in [Attachments A-1](#), [A-2](#) and [D](#) are described below.

- *Concentration in Air*

The Andelman model as modified by Schaum et al. as referenced in *Water Consumption and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment* (Wang 1994) is used to estimate the chemical concentration in air ( $C_a$ ) of VOCs during time spent showering and in the bathroom for a resident adult and child. In the derivation of  $C_a$ , it is assumed that the volume of the bathroom is 6 cubic meters ( $m^3$ ), the shower water flow rate is 1000 L/hour and the fraction of chemical concentration volatilized is 0.9, which are all based on upper estimates of the range of values presented in the Andelman model (Wang 1994). The calculations to model groundwater concentrations in air concentrations are presented in Attachment A-2, RAGS Part D Planning [Tables 4.Supp.4A](#) through [4C](#) for each aquifer scenario.

The total exposure time for showering is 0.71 hour for an adult and 0.54 hour for a child (USEPA 2014a). Since the Andelman model separates out exposure during showering from exposure while in the bathroom, professional judgment is used to split up the time

spent for each in the calculation of the air concentration. For adult exposure, 15 minutes (min) for showering followed by 28 min in the bathroom, for a total of 43 min (0.71 hour) is assumed. For a child, approximately 20 min bathing followed by 13 min in the bathroom, for a total of 33 min (0.54 hour) is assumed. These values are consistent with the exposure time range identified in Table 1 of the Andelman model study (Wang 1994), USEPA-recommended assumptions in Exhibit 3-2 of *RAGS Part E* (USEPA 2004) and fall within the range of estimates presented in Table 16-1 of the *Exposure Factors Handbook* (USEPA 2011a).

- *Exposure Time*

The exposure times for inhalation of groundwater-derived water vapor during showering are 0.71 hour/day for a resident adult and 0.54 hour/day for a resident child (0 to 6 years), which are weighted averages of the 90<sup>th</sup> percentile spent bathing or showering in a day (USEPA 2014a).

- *Exposure Duration and Frequency*

The EDs and EFs are the same as those identified for the ingestion pathway above.

#### 4.4.2 Age-Based Adjustments for Adult and Child

The groundwater HHRA update calculations incorporate age-adjustments for each COPC in the exposure intake term for calculating the cancer risk over the lifetime of a resident or recreator as both a child and adult. For the ingestion exposure pathway, the adjusted IR is a summation of the individual IRs weighted by the body weights and EDs of the receptor from birth to 26 years as described in the USEPA RSL equations (USEPA 2019b).

$$IR_{Adj} = \sum \frac{ED \times IR}{BW}$$

Where:

- IR-Adj = Adjusted ingestion rate (mg-year/day-kg)
- ED = Exposure duration (year)
- IR = Ingestion rate (mg/day)
- BW = Body weight (kg)

For the dermal exposure pathway, the adjusted surface area is a summation of the individual surface areas weighted by the BWs and EDs of the receptor from birth to 26 years similar to the above equation.

The age-adjustment equations are presented in Attachment A-1, RAGS Part D Planning [Table 4.1](#) and calculated in Attachment A-1, [Table 4.Supp.1](#).

The inhalation exposure pathway does not require an age-adjustment as per *RAGS Part F, Appendix A, Section 6.1* (USEPA 2009).

#### 4.4.3 Mutagen Adjustments for Early Life Exposure

USEPA has identified several carcinogens that act via a mutagenic mode of action (MMOA). To account for their early life exposures, age-dependent adjustment factors (ADAFs) have been incorporated into the intake equation. This approach is consistent with the 2005 *Guidelines for Carcinogen Risk Assessment* (USEPA 2005a) and the *Supplemental Guidance for Assessing Susceptibility from Early Life Exposure to Carcinogens* (USEPA 2005b). The intake equations are described in the USEPA RSL equations (USEPA 2019b); the equation for the ingestion exposure pathway is shown here:

$$IR_{Adj} = \sum \frac{ED \times IR}{BW} \times ADAF$$

Where:

ADAF = Age dependent adjustment factors, where  
0-<2 years applied an ADAF of 10,  
2-<6 years applied an ADAF of 3,  
6-<16 years applied an ADAF of 3, and  
16-26 years applied and ADAF of 1.

For the dermal exposure pathway, the adjusted surface area is a summation of the individual surface areas weighted by the BWs and EDs of the receptor from birth to 26 years. That surface area is then multiplied by the ADAF, similar to the above equation.

The MMOA age adjustment equations are presented in Attachment A-1, RAGS Part D Planning [Table 4.1](#) and calculated in Attachment A-1, [Table 4.Supp.2](#).

Exposure intakes for the mutagen TCE incorporate specific calculations, as the toxicity assessment for TCE requires that we address the mutagenic effects on the kidney versus the standard cancer effects on the liver and potential for developing non-Hodgkin's lymphoma. To accomplish this, the mutagenic and standard cancer equations are combined. The different toxicity values for use in the cancer and mutagen intake equations are incorporated using a toxicity value adjustment factor for cancer (CAF) and mutagens (MAF) for all exposure pathways as described in the USEPA RSL equations (USEPA 2019b).

For the mutagen VC, exposure intakes also incorporate specific calculations that are based on the USEPA RSL equations (USEPA 2019b). In the equations, early-life exposure is estimated assuming a lifetime of exposure using the adult slope factor. When evaluating both early life and adult exposures, the early life exposure is added to exposure as an adult, which can be pro-rated (ODEQ 2010).

All of the mutagen equations are presented in Attachment A-1, RAGS Part D Planning [Table 4.1](#).

## 5 Toxicity Assessment

The toxicity assessment provides a framework for characterizing the relationship between the magnitude of exposure to a COPC and the nature and likelihood of adverse health effects that may result from such exposure. For all exposure pathways, there are two approaches for deriving toxicity values. One involves the derivation of a non-cancer reference value, i.e., an oral or dermal reference dose (RfD) and inhalation reference concentration (RfC), while the other involves derivation of a predictive cancer risk estimate, i.e., an oral or dermal cancer slope factor (CSF) and inhalation unit risk (IUR). An overview of the hierarchy to apply toxicity values is described in [Section 5.1](#). The methodology used to develop a toxicity assessment as part of the groundwater HHRA update is provided in [Sections 5.2](#) and [5.3](#).

### 5.1 Sources of Toxicity Values

Pertinent toxicological information on COPCs is selected from the following sources, in descending order of hierarchy, in accordance with USEPA's OSWER Directive 9285.7-53, *Human Health Toxicity Values in Superfund Risk Assessments* (USEPA 2003a).

- Tier 1 – USEPA's IRIS (USEPA 2018a).
- Tier 2 – USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs) – The Superfund Health Risk Technical Support Center develops PPRTVs on a chemical specific basis when requested by USEPA's Superfund program (USEPA 2019a).
- Tier 3 – Other Toxicity Values – Tier 3 includes additional USEPA and non-USEPA sources of toxicity information (ATSDR 2017; Cal EPA 2016 and USEPA 2011b). Priority is given to sources of information that are the most current, transparent, publicly available and those which have been peer reviewed.

The USEPA RSL tables provide toxicity values following the above hierarchy; therefore, the RSL summary table is used as the source of toxicity values (USEPA 2019b). At the time of this groundwater HHRA update, the RSLs were last updated in May 2019.

The cancer and non-cancer toxicity values for the COPCs that are used in the risk assessment are presented in Attachment A-1, RAGS Part D Planning [Tables 5.1](#) through [6.2](#).

### 5.2 Evaluation of Non-Carcinogenic Effects

An oral RfD is calculated for the ingestion exposure pathway; typically expressed as mg/kg-day. An RfC is calculated for the inhalation pathway, expressed in terms of the concentration in the air, in units of mg/m<sup>3</sup>.

In the current absence of dermal slope factors, USEPA has devised a process that utilizes the dose-response relationship obtained from oral administration studies and makes an adjustment for absorption efficiency to represent the toxicity factor in terms of absorbed dose, using route-to-route (oral-to-dermal) extrapolations for systemic effects. This is performed using a chemical-specific oral gastrointestinal absorption factor (GIABS) that accounts for the fact that most slope



factors are expressed as the amount administered per unit time and body weight, with exposure estimates for the dermal pathway expressed as a dose absorbed in the gastrointestinal tract (USEPA 1989; USEPA 2004).

In the calculation of these toxicity values, USEPA uses values (i.e., No Observable Adverse Effect Levels and Lowest Observable Adverse Effect Levels) that express the potential non-carcinogenic effects to identify thresholds for each chemical, and derive an estimate of the exposure below which adverse health effects are not expected to occur over a lifetime.

Two types of non-cancer toxicity values are available from USEPA depending on the length of exposure being evaluated (i.e., chronic or sub-chronic). Chronic toxicity values are specifically developed to be protective for long-term exposure to a compound, and are generally used to evaluate the non-carcinogenic effects associated with exposure periods between 7 years and a lifetime. Sub-chronic toxicity values are useful for characterizing potential non-carcinogenic effects associated with shorter-term exposures. A combination of chronic and sub-chronic toxicity values are presented in the RSL summary table (USEPA 2019b), which is used as the source of toxicity values for this groundwater HHRA update.

The non-cancer toxicity values for the COPCs that are used in the risk assessment are presented in Attachment A-1, RAGS Part D Planning [Tables 5.1](#) and [5.2](#).

### 5.3 Evaluation of Carcinogenic Effects

Carcinogenic risks associated with a given level of exposure to potential carcinogens are typically extrapolated based on slope factors or unit risks. Oral slope factors are the upper 95<sup>th</sup> percent confidence limit of the slope of the dose-response curve, expressed in terms of risk per unit dose [(mg/kg-day)<sup>-1</sup>]. IURs similarly relate the risk of cancer development with the concentration of carcinogen [(mg/m<sup>3</sup>)<sup>-1</sup>].

In the absence of dermal toxicity values for cancer development, USEPA uses the oral dose-response relationship obtained from oral administration studies and adjusts for absorption efficiency with a GIABS factor to derive an absorbed dose in order to assess dermal exposure impacts for cancer, which is described in [Section 5.2](#) above (USEPA 1989; USEPA 2004).

The cancer toxicity values for the COPCs that will be used in the risk assessment are presented in Attachment A-1, RAGS Part D Planning [Tables 6.1](#) and [6.2](#).

For constituents that USEPA assessed prior to publication of the *Guidelines for Carcinogen Risk Assessment* (USEPA 2005a), USEPA considers those belonging to the following cancer weight of evidence groups to be human carcinogens (USEPA 1986):

- Group A – Known Human Carcinogen – Sufficient evidence of carcinogenicity in humans;
- Group B1 – Probable Human Carcinogen – Limited evidence of carcinogenicity in humans;



- Group B2 – Probable Human Carcinogen – Sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans; and
- Group C – Possible Human Carcinogen – Limited evidence of carcinogenicity in animals and inadequate or lack of evidence in humans.

For constituents that USEPA assessed after the 2005 Guidelines were published, USEPA uses a narrative approach to characterize carcinogenicity (USEPA 2005a):

- Carcinogenic to Humans
- Likely to be Carcinogenic to Humans
- Suggestive Evidence of Carcinogenic Potential
- Inadequate Information to Assess Carcinogenic Potential

As shown in Attachment A-1, RAGS Part D Planning [Tables 6.1](#) and [6.2](#), approximately half of the 30 COPCs are known carcinogens or are likely to be carcinogenic.

## 5.4 Health Effects of COPCs

The potential health effects from human health exposure to COPCs in media that are the primary contributors to the risks (see [Section 6.3](#)) are described here, as they are important for understanding the relevance of the risk estimates determined in this groundwater HHRA update. The information presented here is consistent with the basis of the toxicity values determined by USEPA IRIS and other agencies.

- TCE affects the CNS, kidney, liver, immune system, male reproductive system and developing fetus. IRIS and IARC indicate TCE is carcinogenic to humans and available human data strongly suggest the possibility of TCE-induced kidney cancer and the potential for liver cancer and malignant lymphoma in humans. TCE has similar toxicokinetics as that noted for PCE above (ATSDR 2014b).
- VC primarily affects the liver, but also the heart and blood vessels, immune system and developing fetus. IRIS indicates it is a known human carcinogen. Inhalation-based absorption of VC in humans is rapid even at low concentrations. There are no data regarding oral or dermal absorption in humans or distribution of VC in the body (ATSDR 2006).
- 1,2,3-trichloropropane affects the respiratory system with short term exposure causing eye and throat irritation, and long term exposure leading to liver and kidney damage. IRIS indicates 1,2,3-trichloropropane is likely to be carcinogenic to humans via the oral route based on the formation of multiple tumors in animals and data have not been assessed via the inhalation route. 1,2,3-trichloropropane is mobile, can stay in groundwater for a long time sinking to the bottom of the aquifer, and does not adsorb to soil. It does not bioaccumulate. Upon entering the body, it passes through the stomach within the same day (ATSDR 2011).

- CF affects the CNS, such as depression and irritability, as well the liver causing hepatitis and jaundice. IRIS has classified CF as a Group B2 probable human carcinogen. CF breaks down slowly in the air, is mobile and persists in groundwater and does not adsorb to soil. It breaks down to phosgene and hydrogen chloride, which are toxic. It does not bioaccumulate. CF quickly enters the bloodstream via the lungs and intestines and collects in body fat or remains unchanged in the air that is breathed out (ATSDR 1997; USEPA 2016a, 2018a).

## 6 Hazard Identification and Risk Characterization

The information obtained from the exposure assessment ([Section 4](#)) and toxicity assessment ([Section 5](#)) is integrated to identify the potential non-carcinogenic hazard and characterize excess lifetime cancer risk (ELCR) posed by COPCs selected for evaluation in the groundwater HHRA update. The risk associated with exposure to individual COPCs is described and then the risk associated with exposures to multiple COPCs is characterized.

### 6.1 Non-Carcinogenic Hazard Identification

Potential hazards for non-carcinogenic effects are typically estimated by calculating the HQ for each COPC, using the following general equation, which can vary by exposure pathway.

$$HQ = \frac{Intake}{Toxicity}$$

Where:

HQ = Hazard quotient (unitless)

Intake = Chronic daily intake of chemicals or exposure dose  
(mg/kg-day or mg/m<sup>3</sup>)

Toxicity = Oral reference dose (mg/kg-day), dermal reference dose  
(mg/kg-day) or inhalation reference concentration (mg/m<sup>3</sup>)

The cumulative non-cancer HI from exposure to the combination of COPCs in an environmental medium and across all media for a receptor is estimated using the following equation (USEPA 1989):

$$Hazard\ Index = \sum_i HQ_i$$

When the HI for a COPC exceeds unity (1), there may be concern for potential non-cancer effects from that COPC. The HI is an indicator that potential hazard for a specific receptor exposed to a COPC in the environment cannot be ruled out, if it is greater than 1, not that the hazard actually exists. In interpreting HI values, it is important to understand that the values are estimates, based on predictive models, and are subject to the uncertainties inherent in both the estimates of exposure and toxicity benchmarks. The approach of summing non-cancer HQs across constituents and media may overestimate the non-cancer HI because constituents may target different organs in the body and have varying non-cancer health effects.

### 6.2 Carcinogenic Risk Characterization

Potential risks for carcinogenic effects are typically estimated by calculating an ELCR as a result of exposure to site-related carcinogens. Calculation of an ELCR for an exposure pathway

involves multiplying the chronic daily intake for each chemical by its upper-bound cancer slope factor, as described by the following general equation (USEPA 1989), which can vary by exposure pathway and COPC:

$$Risk = Intake \times Toxicity$$

Where:

- Risk = Cancer risk (unitless)
- Intake = Chronic daily intake of chemicals (expressed in mg/kg-day)
- Toxicity = Oral slope factor [(mg/kg-day)<sup>-1</sup>], dermal slope factor [(mg/kg-day)<sup>-1</sup>] or IUR [(µg/m<sup>3</sup>)<sup>-1</sup>]

The cumulative cancer risk from exposure to the combination of constituents in an environmental medium and also across all media for a receptor is estimated following USEPA guidance (USEPA 1989) and the following general equation:

$$Cumulative Risk = \sum_i Risk_i$$

For known or suspected carcinogens, USEPA considers acceptable exposure levels to generally be concentration levels that represent an ELCR to an individual of between one in ten thousand (1.0E-04) and one in a million (1.0E-06). As with the non-cancer HI, cumulative cancer risk is an indicator that potential risk for a specific receptor exposed to a COPC in the environment cannot be ruled out, not that risk actually exists.

## 6.3 Risk Assessment Results

The results of the hazard identification and risk characterization are presented below, by receptor and aquifer. The risk estimates for a resident are calculated using the USEPA Region 4 methodology of assuming that the risk estimates for the combined dermal/inhalation exposures are equivalent to those attributable to ingestion exposures. The cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D [Tables 7.1A](#) through [7.3B](#). Attachment A-1, [Tables 7.1A](#) and [B](#) present risk estimates for exposure of workers and residents groundwater in the Fluvial aquifer, respectively. Attachment A-1, [Tables 7.2A](#) and [7.2B](#) present risk estimates for exposure of workers and residents to groundwater in the IAQ. Attachment A-1, [Tables 7.3A](#) and [7.3B](#) present risk estimates for exposure of workers and residents groundwater in the MAQ. COPCs are identified for only exposure pathways that have an ELCR greater than 1.0E-06 and a HI greater than 1, considered to be primary contributors to the risk estimates.

### 6.3.1 Fluvial Aquifer Evaluation

#### 6.3.1.1 Worker

The cumulative cancer risks and non-cancer HIs by exposure pathway for a current on-site worker's exposure to COPCs in the Fluvial aquifer are summarized in [Table 6-1](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D Planning [Table 7.1A](#).

The total ELCR for a worker's exposure to COPCs in groundwater via tapwater from all pathways is 2.4E-04. The ELCR for groundwater ingestion exposure is 2.3E-04, with primary contributors of 1,2,3-trichloropropane at 1.9E-04, CF at 2.1E-05 and VC at 1.3E-05. The ELCR for groundwater dermal exposure is 1.1E-05, with the primary contributor being 1,2,3-trichloropropane at 9.2E-06.

The total non-cancer HI is 1.3E+00. The HI for groundwater ingestion is 1.2E+00 and the primary contributors are various VOCs with HQs less than 1. The HI for groundwater dermal exposure is below 1. See [Table 6-1](#).

**Table 6-1 Worker's Exposure to Fluvial Aquifer Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                                                                           | Hazard Index | Primary COPCs                                                                                       |
|----------------|------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------|
|                | <i>Lifetime</i>        |                                                                                                                         |              |                                                                                                     |
| Ingestion      | 2.3E-04                | 1,2,3-trichloropropane (1.9E-04), CF (2.1E-05), VC (1.3E-05), TCE (2.4E-06), methylene chloride (1.4E-06), CT (1.4E-06) | 1.2E+00      | Methylene chloride (0.32), TCE (0.29), CF (0.19), 1,2,4-trimethylbenzene (0.15), cis-1,2-DCE (0.14) |
| Dermal         | 1.1E-05                | 1,2,3-Trichloropropane (9.2E-06)                                                                                        | 1.3E-01      | --                                                                                                  |
| <b>Total</b>   | 2.4E-04                |                                                                                                                         | 1.3E+00      |                                                                                                     |

### 6.3.1.2 Resident

The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the Fluvial aquifer are summarized in [Table 6-2](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D Planning [Table 7.1B](#).

**Table 6-2 Resident's Exposure to Fluvial Aquifer Groundwater**

| Exposure Route      | Cumulative Cancer Risk | Primary COPCs                                                                                                           | Hazard Index |              | Primary COPCs                                                                                           |
|---------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|--------------|---------------------------------------------------------------------------------------------------------|
|                     | <i>Lifetime</i>        |                                                                                                                         | <i>Adult</i> | <i>Child</i> |                                                                                                         |
| Ingestion           | 3.1E-03                | 1,2,3-trichloropropane (2.8E-03), VC (2.2E-04), CF (8.4E-05), methylene chloride (2.0E-05), TCE (1.5E-05), CT (5.5E-06) | 3.3E+00      | 5.6E+00      | For child, methylene chloride (1.5), TCE (1.4) - others are less than 1. For adult, all are less than 1 |
| Dermal / Inhalation | 6.3E-03                | See above                                                                                                               | 6.7E+00      | 1.1E+01      | See above                                                                                               |
| <b>Total</b>        | 9.4E-03                |                                                                                                                         | 1.0E+01      | 1.7E+01      |                                                                                                         |

The total ELCR for a resident's exposure to COPCs in groundwater via tapwater from all pathways is 9.4E-03. The primary contributors are 1,2,3-trichloropropane at 2.8E-03 and VC at 2.2E-04.

The total non-cancer HI is 1.0E+01 for an adult and 1.7E+01 for a child. The primary contributors are methylene chloride and TCE. See [Table 6-2](#).

## 6.3.2 IAQ Evaluation

### 6.3.2.1 Worker

The cumulative cancer risks and non-cancer HIs by exposure pathway for a current on-site worker's exposure to COPCs in the IAQ are summarized in [Table 6-3](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D Planning [Table 7.2A](#).

The total ELCR for a worker's exposure to COPCs in groundwater via tapwater from all pathways is 4.0E-06. The ELCR for groundwater ingestion exposure is 3.8E-06 with primary contributors of TCE at 1.6E-06 and VC at 1.5E-06.

The total non-cancer HI is less than 1 for all pathways. See [Table 6-3](#).

**Table 6-3 Worker's Exposure to IAQ Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs               | Hazard Index | Primary COPCs |
|----------------|------------------------|-----------------------------|--------------|---------------|
|                | <i>Lifetime</i>        |                             |              |               |
| Ingestion      | 3.8E-06                | TCE (1.6E-06), VC (1.5E-06) | 2.6E-01      | TCE (1.9E-01) |
| Dermal         | 2.3E-07                | --                          | 2.4E-02      | --            |
| <b>Total</b>   | 4.0E-06                |                             | 2.8E-01      |               |

### 6.3.2.2 Resident

The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the IAQ are summarized in [Table 6-4](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D Planning [Table 7.2B](#).

The total ELCR for a resident's exposure to COPCs in groundwater via tapwater from all pathways is 1.2E-04. The primary contributors are VC and TCE.

The total non-cancer HI is 2.2E+00 for an adult and 3.6E+00 for a child. The primary contributors are TCE and PCE. See [Table 6-4](#).

**Table 6-4 Resident's Exposure to IAQ Groundwater**

| Exposure Route      | Cumulative Cancer Risk | Primary COPCs               | Hazard Index |              | Primary COPCs                                                            |
|---------------------|------------------------|-----------------------------|--------------|--------------|--------------------------------------------------------------------------|
|                     | <i>Lifetime</i>        |                             | <i>Adult</i> | <i>Child</i> |                                                                          |
| Ingestion           | 3.9E-05                | VC (2.6E-05), TCE (1.0E-05) | 7.2E-01      | 1.2E+00      | TCE (adult 5.4E-01, child 9.1 E-01), PCE (adult 1.0E-01, child 1.7 E-01) |
| Dermal / Inhalation | 7.8E-05                | See above                   | 1.4E+00      | 2.4E+00      | See above                                                                |
| <b>Total</b>        | 1.2E-04                |                             | 2.2E+00      | 3.6E+00      |                                                                          |

### 6.3.3 MAQ Evaluation

#### 6.3.3.1 Worker

The cumulative cancer risks and non-cancer HIs by exposure pathway for a current on-site worker's exposure to COPCs in the MAQ are summarized in [Table 6-5](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D Planning [Table 7.3A](#).

The total ELCR for a worker's exposure to COPCs in groundwater via tapwater from all pathways is 6.4E-07. The total non-cancer HI is less than 1 for all pathways. See [Table 6-5](#).

**Table 6-5 Worker's Exposure to MAQ Groundwater**

| Exposure Route | Cumulative Cancer Risk | Hazard Index |
|----------------|------------------------|--------------|
|                | <i>Lifetime</i>        |              |
| Ingestion      | 5.9E-07                | 5.2E-02      |
| Dermal         | 5.3E-08                | 4.8E-03      |
| <b>Total</b>   | 6.4E-07                | 5.7E-02      |

#### 6.3.3.2 Resident

The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the MAQ are summarized in [Table 6-6](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-1, RAGS Part D Planning [Table 7.3B](#).

The total ELCR for a resident's exposure to COPCs in groundwater via tapwater from all pathways is 9.5E-06. The primary contributor is TCE.

The total non-cancer HI is less than 1 for adult and child; the primary contributor is TCE. See [Table 6-6](#).

**Table 6-6 Resident's Exposure to MAQ Groundwater**

| Exposure Route      | Cumulative Cancer Risk | Primary COPCs | Hazard Index |              | Primary COPCs                      |
|---------------------|------------------------|---------------|--------------|--------------|------------------------------------|
|                     | <i>Lifetime</i>        |               | <i>Adult</i> | <i>Child</i> |                                    |
| Ingestion           | 3.2E-06                | TCE (2.2E-06) | 1.5E-01      | 2.4E-01      | TCE (adult 1.2E-01, child 2.0E-01) |
| Dermal / Inhalation | 6.3E-06                | See above     | 2.9E-01      | 4.8E-01      | See above                          |
| <b>Total</b>        | 9.5E-06                |               | 4.4E-01      | 7.2E-01      |                                    |

### 6.3.4 Comparison of Current Risks to the 2000 MI RI Risks

The groundwater component of the 2000 HHRA follows the general risk methodology described above and uses the same primary USEPA guidance as this groundwater HHRA update. However, USEPA has published additional risk assessment guidance and updated toxicity data since the 2000 HHRA was completed. These guidance documents include changes to EPA's risk assessment methodology as it relates to exposure factors, evaluation of inhalation risks, the effects of chemicals now being identified as having a MMOA, and in the calculation of groundwater EPCs.

Taken alone, without considering potential changes in COPC concentrations or other revisions to how risk is calculated, the changes can result in either an increase or decrease in the calculated risk for the COPCs; this groundwater HHRA update was performed to re-evaluate the risks to COPCs in the groundwater to help determine whether or not the remedy remains protective of the potential risks to receptors at DDMT.

It is important to note that given the different methodologies for risk calculations since 2000, it is not a straightforward comparison between the 2000 and current risk estimates, as indicated here:

- The 2000 HHRA utilized the average of the concentrations in each data set (as opposed to calculating the 95 percent UCLs that are upper estimates of the true population average) and this led to slightly lower EPCs when compared to the EPCs calculated in this groundwater HHRA update. Refer to [Table 34-4](#) in the 2000 HHRA, included in Attachment E of this groundwater HHRA update, compared to the current EPCs in Attachment A-1, [Tables 3.1](#) to [3.3](#).
- The 2000 HHRA had a larger analyte list that included inorganics. In comparison, this groundwater HHRA update evaluated VOCs and some SVOCs, as samples have been analyzed for these methods for the past 5 years. The groundwater contaminants requiring remediation in the ROD were limited to VOCs.
- The 2000 HHRA divided the groundwater data into Plumes "A", "B" and "C", which represent potential plumes in the southwest corner, southeast corner and northwest



corner, respectively. In comparison, this groundwater HHRA update evaluated groundwater by aquifer and depth, based on current understanding of where contamination exists and using the 2014 USEPA *Memorandum on Determining Groundwater Exposure Point Concentrations*. Refer to Attachment E, [page 34-1](#) and [Table 34-1](#).

- The 2000 HHRA applied inhalation toxicity values that were based on IR and body weight, which is different than the current inhalation dosimetry methodology – see Attachment E, [Table 34-5](#) compared to Attachment A-1, [Tables 5s](#) and [6s](#). Also, some of the exposure factors for each receptor scenario are different. See Attachment E, [Table 7-4c](#) compared to Attachment A-1, [Table 4-1](#).

The results of the 2000 HHRA indicated ELCRs for the three plumes with a range of 5E-06 to 8E-06 for industrial workers, a range of 2E-05 to 3E-05 for resident adults and a range of 8E-06 to 1E-05 for resident children (CH2M HILL 2000). The HIs for each receptor and plume were less than 1.

In comparison, the risk estimates calculated in this HHRA, by aquifer, using current guidance and methodology vary in being lower, higher or the same than those of the 2000 HHRA, depending on the exposure scenario and other factors.

### 6.3.5 Vapor Intrusion Evaluation

To calculate whether a VI exposure pathway is complete and to determine VI risks and hazards, the Department of Defense (DOD) *Vapor Intrusion Handbook* (DOD 2009) was used in concert with USEPA's VISL Calculator (version 3.5.1 using May 2016 RSLs; USEPA 2016c) and the J&E model (USEPA 2003b) to evaluate VI at DDMT, separately from the groundwater HHRA update calculations.

The complete VI screening level assessment is provided in [Attachment C](#). The attachment includes a VI map for the MI showing the locations of the CVOC plumes, concentrations at individual wells, groundwater elevation contours in the Fluvial aquifer and location of existing buildings.

The October 2016 groundwater analytical results were reviewed and wells DR2-1, MW-100B and PMW21-04 were selected for the VI evaluation, as they had the highest concentrations of the primary COPCs (CF, CT, PCE, TCE and VC) among the wells sampled and they are located adjacent to occupied buildings. These wells are screened in the Fluvial aquifer.

Results of the VI evaluation for a commercial scenario indicate:

- Constituents present in groundwater are sufficiently volatile and toxic to pose a potential human health risk from VI to indoor air of current and future buildings;
- Recent analytical results for COPCs in groundwater exceed commercial screening levels estimated using the VISL calculator beneath occupied buildings indicating a potential human health risk from VI; and

- The potential human health risk from COPCs in groundwater within occupied structures at DDMT is greater than  $1.0\text{E-}06$  for cancer and greater than one for non-cancer using the VISL calculator. Cancer and non-cancer risk calculated using the J&E model are almost an order of magnitude lower, but is still greater than  $1.0\text{E-}06$  for cancer.

Large portions of DDMT are paved or developed with overlying structures. This can prevent vertical migration of VOCs through the subsurface to the atmosphere. However, it may also allow for greater horizontal migration in the subsurface. A work plan has been prepared for soil gas sampling to better estimate human health risk via this pathway of potential exposure. Sampling will be conducted in 2018.

## 6.4 Risk Assessment Summary

This groundwater HHRA update was prepared to evaluate potential baseline health risks for current and future receptor exposure to COPCs in the Fluvial aquifer, IAQ and MAQ. The COPC screening of the groundwater HHRA update identified 30 COPCs from sampling events conducted from 2012 to 2017. The potential exposure scenarios considered in this groundwater HHRA update include drinking water and incidental ingestion, dermal contact and inhalation, as shown in the CSM, [Figure 4-1](#).

The evaluation of potential cancer risks and non-cancer hazards to current/future receptors on-site from exposure to COPCs in groundwater indicates that there are several COPCs, now identified as COCs whose concentrations in groundwater are the primary contributors to the hazard and risk estimates, and exposure to these COCs may result in potential adverse health effects.

### 6.4.1 COC Summary by Aquifer and Receptor

The evaluation of potential cancer risks and non-cancer hazards to on-site current/future workers indicates that 1,2,3-trichloropropane, CF, VC, TCE, methylene chloride and CT are COCs in the Fluvial aquifer. For the IAQ, TCE and VC are COCs. No COCs are identified in the MAQ. CT, CF, PCE, TCE and VC volatilizing into buildings are also of potential concern to workers.

The evaluation of potential cancer risks and non-cancer hazards to future on-site residents indicates that 1,2,3-trichloropropane, VC, CF, methylene chloride, TCE and CT are COCs in the Fluvial aquifer. For the IAQ, VC and TCE are COCs. TCE is the only COC in the MAQ.

The constituent 1,2,3-trichloropropane is an artifact of the EBT remedy and was detected in only eight wells within the TTA-2 TA, with a detected range of 0.694 to 83.3  $\mu\text{g/L}$  between 2012 and 2017. In April 2017, sampling indicated that 1,2,3-trichloropropane was detected in only four wells with a range of 0.694 to 15.9  $\mu\text{g/L}$ . The constituent 1,2,3-trichloropropane had not been detected prior to the start of enhanced bioremediation treatment and has only been detected in one area (TTA-2) that was impacted primarily by PCE, TCE and CT. Detection likely results from it being a by-product of the bioremediation process; in any case, its presence is limited and the concentration has decreased over time. TCP will continue to be analyzed during site

monitoring, with concentrations and trend analysis to be reported and the need for any remedial action evaluated.

## 6.4.2 Conclusions

The results of this groundwater HHRA update indicate that there is potential for receptors to experience adverse cancer or non-cancer health effects from exposure to the contaminated groundwater.

The *Fourth Five-Year Review* (HDR 2017d) technical assessment states that the MI EBT remedy reduced CVOC concentrations in the TAs, but not to levels below MCLs, and natural attenuation outside the TAs has been less than projected in the MI ROD.

In addition, understanding of site hydrogeology and contaminant extent on the MI has changed based on data collected from wells installed since the *Third Five-Year Review* (HDR 2012). The 2016 MI LTM Report (HDR 2017a) indicated that the areal extent of the remedial action will need to be expanded to meet the RAO for concentrations below the MCLs in the MI.

The existing land use restrictions at the MI are:

- No residential land use or other child-occupied facilities, including daycare on the MI; and
- No production/consumptive use of groundwater or drilling groundwater wells (does not apply to wells installed as part of the CERCLA action) on the MI.

As long as these restrictions are maintained, the exposure pathways to the contaminated groundwater are not complete, with the possible exception of vapor intrusion. A work plan has been prepared for soil gas sampling to better estimate human health risk via vapor intrusion. Sampling will be conducted in 2018.

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## 7 Uncertainty Analysis

This section includes a discussion on the inherent uncertainties in this groundwater HHRA update, including methods, site-specific analytical data, inputs based on risk guidance and toxicity factors, and conclusions. The section also presents additional sensitivity analyses.

### 7.1 HHRA Uncertainties

There is uncertainty inherent in the methods, inputs and conclusions of any HHRA. This level of uncertainty results from the fact that almost every step in the risk assessment process involves assumptions and unknowns, contributing to the total uncertainty in the final conclusions. These include, but are not limited to:

- Knowledge of the site, including its geology, hydrology and habitat and past and current land use;
- Environmental parameters, chemistry and sampling analysis which can under- or overestimate exposure concentrations;
- Assumptions in the derivation of screening benchmarks that are used to identify COPCs;
- The exposure factors used for quantifying exposure are conservative and reflect upper-bound assumptions; which can under- or overestimate the resulting hazard and risk values;
- Maximum concentrations applied as a measure of exposure for each medium and receptor in the initial COPC screening; a conservative assumption intentionally used to focus the HHRA on those pathways and receptors potentially at greatest risk. This likely overestimates the number of COPCs identified;
- Bioavailability of 100 percent is assumed for uptake by humans. This assumption is known to be invalid for most chemical substances under varying environmental conditions and likely overestimates risks and HQs; and
- Summing non-cancer HQs across constituents and media may overestimate the non-cancer HI, as constituents may target different organs in the body and have varying non-cancer health effects.

Uncertainties specific to this groundwater HHRA update include:

- This groundwater HHRA update was performed as “baseline” that, in accordance with applicable guidance, includes consumption of drinking water with no controls. However, no one is currently using groundwater as a potable source, as LUCs have been implemented to prevent building of residences and installation of wells over the majority of the DDMT.
- Off-site groundwater data were not used in the groundwater HHRA update. It has been determined that there are potential off-site sources impacting DDMT groundwater quality, based on CVOCs being detected in off-site wells upgradient of the MI and Dunn

Field. The complexity involved in determining the contribution of these potential sources to detected levels of contamination versus that from historic activity at DDMT adds to the uncertainty inherent in the groundwater HHRA update.

## 7.2 Background Data Sensitivity Analysis

There were 24 field samples and two field duplicate samples collected between 2012 to 2017 in the Fluvial aquifer from background wells MW-16, 19, 23, 24, 53, 55, 93, 99, 102B, 272, 274, 275, 276, 277, 278, 282 and 283; the data associated with these samples were excluded from the groundwater HHRA update risk calculations. Of the 67 analytes (USEPA Target Compound List VOCs), only 13 are detected. The range of concentrations for those constituents identified as the primary CVOs in the Fluvial aquifer are generally lower compared to DDMT-related concentrations: PCE detected concentrations range from 0.4 to 2.6 µg/L; TCE concentrations from 0.34 to 1.02 µg/L; VC was not detected in any of these wells; CF concentrations range from 0.14 to 0.45 µg/L; and CT was not detected in any of these wells.

The maximum detected concentrations of these background samples are compared to the Federal MCLs (USEPA 2017, 2019b) and USEPA RSLs for Residential Tapwater at a target cancer risk of 1E-06 and target non-cancer HQ of 0.1 (USEPA 2019b). Three of the constituents are present in the Fluvial aquifer at concentrations greater than the USEPA Tapwater RSL, including 1,2-dichloroethane, CF and TCE. None of the constituents are greater than the Federal MCLs. The background maximum concentrations are less than the DDMT-related fluvial maximum concentrations, except for 1-chlorohexane and dichlorodifluoromethane. See [Table 7-1](#) below.

**Table 7-1 Comparison of Background Data to Screening Levels and DDMT-Related Data**

| Chemical                 | Background Fluvial Maximum (µg/L) | DDMT Fluvial aquifer Maximum (µg/L) | USEPA Tapwater RSL (µg/L) | Federal MCL (µg/L) |
|--------------------------|-----------------------------------|-------------------------------------|---------------------------|--------------------|
| 1,2-Dichloroethane       | <b>0.737</b>                      | 14.7                                | 0.17                      | 5                  |
| 1-Chlorohexane           | 0.131                             | ND                                  | Not available             | Not available      |
| Acetone                  | 23.5                              | 7,790                               | 1400                      | Not available      |
| Benzene                  | 0.546                             | 6.42                                | 0.46                      | 5                  |
| Carbon Disulfide         | 1.66                              | 28.3                                | 81                        | Not available      |
| CF                       | <b>0.452</b>                      | 22,100                              | 0.22                      | 80                 |
| Chloromethane            | 0.523                             | 74.7                                | 19                        | Not available      |
| Cis-1,2-dichloroethylene | 0.348                             | 323                                 | 3.6                       | 70                 |
| Dichlorodifluoromethane  | 5.51                              | ND                                  | 20                        | Not available      |
| Methyl Ethyl Ketone      | 3.25                              | 20,800                              | 560                       | Not available      |
| PCE                      | 2.59                              | 300                                 | 4.1                       | 5                  |
| Toluene                  | 0.446                             | 149                                 | 110                       | 1000               |
| TCE                      | <b>1.02</b>                       | 286                                 | 0.28                      | 5                  |

**Note:** Concentrations greater than the USEPA Tapwater RSL are in **bold type**.

## 7.3 Resident Sensitivity Analysis

In contrast to the methodology used in [Section 6.3](#), the risk estimates for a resident are calculated here using the national USEPA methodology for the dermal water and shower inhalation pathways. The results of the hazard identification and risk characterization are presented below, by receptor and aquifer, and compared to the risk estimates in [Section 6.3](#). The cancer risks and non-cancer HQs are presented in Attachment A-2, RAGS Part D [Tables 7.4](#) through [7.6](#). Attachment A-2, [Table 7.4](#) presents risk estimates for exposure of residents to groundwater in the Fluvial aquifer. Attachment A-2, [Table 7.5](#) presents risk estimates for exposure of residents to groundwater in the IAQ. Attachment A-2, [Table 7.6](#) presents risk estimates for exposure of residents to groundwater in the MAQ. COPCs are identified for only exposure pathways that have an ELCR greater than 1.0E-06 and a HI greater than one, considered to be primary contributors to the risk estimates.

### 7.3.1 Fluvial Aquifer Evaluation

In comparison to the results presented in [Section 6.3.1](#), the ELCR is slightly lower, but within the same order of magnitude, while the HI values vary. Because the results of the dermal and inhalation pathway calculations are included here, other contributors to the risk estimates are identified, such as 1,2,4-trimethylbenzene, 1,1,2,2-tetrachloroethane, 1,2-dichloroethane and 1,2-dichloropropane. The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the Fluvial aquifer are summarized in [Table 7-2](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-2, RAGS Part D Planning [Table 7.4](#).

**Table 7-2 Sensitivity Analysis: Resident's Exposure to Fluvial Aquifer Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                                                                           | Hazard Index |         | Primary COPCs                                                                                      |
|----------------|------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|---------|----------------------------------------------------------------------------------------------------|
|                | Lifetime               |                                                                                                                         | Adult        | Child   |                                                                                                    |
| Ingestion      | 3.1E-03                | 1,2,3-trichloropropane (2.8E-03), VC (2.2E-04), CF (8.4E-05), methylene chloride (2.0E-05), TCE (1.5E-05), CT (5.5E-06) | 3.3E+00      | 5.6E+00 | For child, methylene chloride (1.5), TCE (1.4); others are less than 1. For adult, all less than 1 |
| Dermal         | 2.7E-04                | 1,2,3-trichloropropane (2.4E-04), VC (1.5E-05), CF (6.5E-06), TCE (2.0E-06), CT (1.3E-06)                               | 8.2E-01      | 1.2E+00 | For child, all less than 1                                                                         |

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                                                                                                                                                           | Hazard Index |         | Primary COPCs                                                                                                                                                                                                                                                                                                                    |
|----------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | Lifetime               |                                                                                                                                                                                                         | Adult        | Child   |                                                                                                                                                                                                                                                                                                                                  |
| Inhalation     | 7.5E-04                | CF (7.1E-04), TCE (2.7E-05), CT (5.3E-06), VC (4.3E-06), 1,1,2,2-tetrachloroethane (2.4E-06), bromodichloromethane (2.1E-06), 1,2-dichloroethane (2.0E-06), methylene chloride (1.6E-06), PCE (1.2E-06) | 9.6E+00      | 8.1E+00 | TCE (adult 3.3E+00, child 2.8E+00), 1,2,3-trichloropropane (adult 2.6E+00, child 2.2E+00), 1,2,4-trimethylbenzene (adult 1.2E+00, child 9.8E-01), CF (adult 8.7E-01, child 7.4E-01), 1,1,2-trichloroethane (adult 7.1E-01, child 6.0E-01), PCE (adult 3.2E-01, child 2.7E-01), methylene chloride (adult 1.4E-01, child 1.2E-01) |
| <b>Total</b>   | 4.2E-03                |                                                                                                                                                                                                         | 1.4E+01      | 1.5E+01 |                                                                                                                                                                                                                                                                                                                                  |

### 7.3.2 IAQ Evaluation

In comparison to the results presented in [Section 6.3.2](#), the ELCR is lower and the HI values are higher or the same. Because the results of the dermal and inhalation pathway calculations are included here, other contributors to the risk estimates are identified, such as CF, 1,1,2,2-tetrachloroethane and PCE. The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the IAQ are summarized in [Table 7-3](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-2, RAGS Part D Planning [Table 7.5](#).

**Table 7-3 Sensitivity Analysis: Resident's Exposure to IAQ Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                    | Hazard Index |         | Primary COPCs                                                          |
|----------------|------------------------|------------------------------------------------------------------|--------------|---------|------------------------------------------------------------------------|
|                | Lifetime               |                                                                  | Adult        | Child   |                                                                        |
| Ingestion      | 3.9E-05                | VC (2.6E-05), TCE (1.0E-05)                                      | 7.2E-01      | 1.2E+00 | TCE (adult 5.4E-01, child 9.1E-01), PCE (adult 1.0E-01, child 1.7E-01) |
| Dermal         | 3.7E-06                | VC (1.7E-06), TCE (1.3E-06)                                      | 1.6E-01      | 2.4E-01 | TCE (adult 8.7E-02, child 1.3E-01)                                     |
| Inhalation     | 3.0E-05                | TCE (1.8E-05), CF (8.3E-06), 1,1,2,2-tetrachloroethane (2.1E-06) | 2.5E+00      | 2.1E+00 | TCE (adult 2.2E+00, child 1.9E+00), PCE (adult 2.5E-01, child 2.2E-01) |
| <b>Total</b>   | 7.3E-05                |                                                                  | 3.4E+00      | 3.6E+00 |                                                                        |

### 7.3.3 MAQ Evaluation

In comparison to the results presented in [Section 6.3.3](#), the ELCR is slightly lower and HI values are slightly higher. Because the dermal and inhalation pathway calculated risks are included here, other contributors to the risk estimates are identified, such as CT and CF. The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and



child's exposure to COPCs in the MAQ are summarized in [Table 7-4](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment A-2, RAGS Part D Planning [Table 7.6](#).

**Table 7-4 Sensitivity Analysis: Resident's Exposure to MAQ Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs | Hazard Index |              | Primary COPCs                      |
|----------------|------------------------|---------------|--------------|--------------|------------------------------------|
|                | <i>Lifetime</i>        |               | <i>Adult</i> | <i>Child</i> |                                    |
| Ingestion      | 3.2E-06                | TCE (2.2E-06) | 1.5E-01      | 2.4E-01      | TCE (adult 1.2E-01, child 2.0E-01) |
| Dermal         | 5.3E-07                | --            | 3.2E-02      | 4.7E-02      | --                                 |
| Inhalation     | 5.7E-06                | TCE (4.0E-06) | 5.4E-01      | 4.6E-01      | TCE (adult 4.9E-01, child 4.2E-01) |
| <b>Total</b>   | 9.4E-06                |               | 7.2E-01      | 7.5E-01      |                                    |

## 7.4 Groundwater Core of the Plume Sensitivity Analysis

The USEPA "Core of the Plume" guidance (USEPA 2014a) provides a recommended approach to improve the quality and consistency in calculating groundwater EPCs. The approach involves evaluating data from the "core/center of the plume," which is defined as the three-dimensional core/center zone of highest concentrations of each constituent within a delineated groundwater plume.

This groundwater HHRA update includes an evaluation of groundwater scenarios in the primary risk calculations using all of the groundwater data in each aquifer for the COPCs. A sensitivity analysis was also performed that calculates more conservative groundwater EPCs for the Core of the Plume subset of data. That data set includes data for the five wells with the highest maximum detected concentrations for the COPCs identified in [Section 3.3](#). The supporting tables for the evaluation are presented in [Attachment D](#). The Core of the Plume sensitivity analysis evaluates the Fluvial aquifer and IAQ; it does not include the MAQ, as there are limited data available for this aquifer and the results of a Core of Plume analysis would be the same as the initial results. The Core of the Plume sensitivity analysis includes risk estimates based on a resident's exposure to COPCs via the dermal contact with water and shower inhalation pathways, as per national USEPA guidance.

### 7.4.1 Groundwater EPCs Calculated using Core of the Plume Data

The refinement process for calculation of the groundwater EPCs for the Core of the Plume evaluation is described below.

#### 7.4.1.1 Selection of COPCs and Data

The groundwater HHRA update identified 30 COPCs, listed in [Table 3-3](#). The 13 COPCs with less than 5% detection frequency, which were not risk drivers in the main risk conclusions (see

**Section 6.3 Risk Assessment Results**), are flagged with a “\*” in [Table 3-3](#) and are not carried through in the Core of the Plume evaluation.

The maximum concentrations for each well were reviewed for each of these COPCs. Based on the distribution of wells in which the largest concentrations were located, the groundwater data from the five wells with the highest concentrations were reviewed for each COPC. For each of these wells, the highest and the second highest detected concentrations were chosen to be included in the Core of the Plume data set. This means that each data set for the calculation of the 95 percent UCLs consisted of no more than the 10 detected highest concentrations for each COPC, in accordance with the guidance (USEPA 2014a).

The groundwater EPCs are presented in Attachment D, [Table D.1](#) for the Fluvial aquifer and [Table D.2](#) for the IAQ. The supporting ProUCL data input and outputs are provided in Attachment D, [Tables D.11](#) through [D.13](#).

#### 7.4.1.2 Exposure Factors & Toxicity Values

The exposure factors applied in the exposure scenarios for a worker and resident's exposure to groundwater remain the same, with the exception of exposure factors that incorporate the EPCs. The calculation of the DA-event from water contact is presented in Attachment D, [Tables D.3](#) and [D.4](#) and the calculation of bathroom air concentrations is in Attachment D, [Tables D.5](#) and [D.6](#).

The toxicity values are the same as those applied in the groundwater HHRA update.

### 7.4.2 Core of the Plume - Fluvial Aquifer

#### 7.4.2.1 Worker

The cumulative cancer risks and non-cancer HIs by exposure pathway for a current on-site worker's exposure to COPCs in the Fluvial aquifer are summarized in [Table 7-5](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment D, [Table D.7](#).

The total ELCR for a worker's exposure to COPCs in groundwater via tapwater from all pathways is 1.2E-02. The ELCR for groundwater ingestion exposure is 1.1E-02; primary contributors are 1,2,3-trichloropropane, CF and VC. The ELCR for groundwater dermal exposure is 5.3E-04; the primary contributor is 1,2,3-trichloropropane.

The total non-cancer HI is 3.3E+01. The HI for ingestion exposure is 3.1E+01 and the primary contributors are CF, TCE and cis-1,2-DCE. The HI for dermal exposure is 1.5E+00 whose main contributors are CF, TCE and PCE. See [Table 7-2](#).

**Table 7-5 Core of Plume: Worker's Exposure to Fluvial Aquifer Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                                                                                                                                                              | Hazard Index | Primary COPCs                                      |
|----------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------|
|                | <i>Lifetime</i>        |                                                                                                                                                                                                            |              |                                                    |
| Ingestion      | 1.1E-02                | 1,2,3-trichloropropane (8.3E-03), CF (2.6E-03), VC (3.8E-04), CT (3.7E-05), TCE (3.4E-05), 1,2-dichloroethane (4.3E-06), 1,2-dichloropropane (3.7E-06), PCE (2.2E-06), 1,1,2,2-tetrachloroethane (1.3E-06) | 3.1E+01      | CF (2.4E+01), TCE (4.1E+00), cis-1,2-DCE (1.3E+00) |
| Dermal         | 5.3E-04                | 1,2,3-trichloropropane (4.1E-04), CF (9.8E-05), VC (1.3E-05), CT (4.1E-06), TCE (2.3E-06)                                                                                                                  | 1.5E+00      | CF (8.8E-01), TCE (2.8E-01), PCE (1.2E-01)         |
| <b>Total</b>   | 1.2E-02                |                                                                                                                                                                                                            | 3.3E+01      |                                                    |

#### 7.4.2.2 Resident

The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the Fluvial aquifer are summarized in [Table 7-6](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment D, [Table D.8](#).

The total ELCR for a resident's exposure to COPCs in groundwater via tapwater from all pathways is 3.2E-01. The groundwater inhalation pathway is 1.7E-01, the ingestion pathway is 1.3E-01 and the dermal pathway is 1.2E-02; the primary contributors to these pathways are CF, 1,2,3-trichloropropane TCE and VC.

The total non-cancer HI is 6.1E+02 for an adult and 5.9E+02 for a child. The inhalation and ingestion pathways contribute the most to these HIs; TCE, 1,2,3-trichloropropane and CF are the primary contributors. See [Table 7-6](#).

**Table 7-6 Core of Plume: Resident's Exposure to Fluvial Aquifer Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                                                                                           | Hazard Index |              | Primary COPCs                                                                                                                                                                                                                      |
|----------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <i>Lifetime</i>        |                                                                                                                                         | <i>Adult</i> | <i>Child</i> |                                                                                                                                                                                                                                    |
| Ingestion      | 1.3E-01                | 1,2,3-trichloropropane (1.2E-01), CF (1.1E-02), VC (6.7E-03), TCE (2.1E-04), CT (1.5E-04)                                               | 8.7E+01      | 1.5E+02      | CF (adult 6.6E+01, child 1.1E+02), TCE (adult 1.2E+01, child 1.9E+01), cis-1,2-DCE (adult 3.5E+00, child 5.8E+00), PCE and VC (adult 2.3, child 1.4), CT (adult 1.0E+00, child 1.7E+00), 2-butanone (adult 7.1E-01, child 1.2E+00) |
| Dermal         | 1.2E-02                | 1,2,3-trichloropropane (1.1E-02), CF (8.2E-04), VC (4.5E-04), CT (3.4E-05), TCE (2.8E-05), PCE (4.5E-06), 1,2-dichloropropane (1.2E-06) | 9.5E+00      | 1.4E+01      | CF (adult 5.8E+00, child 8.7E+00), TCE (adult 1.9E+00, child 2.8E+00), PCE (adult 7.8E-01, child 1.2E+00)                                                                                                                          |

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                                                                                        | Hazard Index |              | Primary COPCs                                                                                                                                                                                                                                                                                                                                                |
|----------------|------------------------|----------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <i>Lifetime</i>        |                                                                                                                      | <i>Adult</i> | <i>Child</i> |                                                                                                                                                                                                                                                                                                                                                              |
| Inhalation     | 1.7E-01                | CF (1.5E-01), VC (2.1E-02), TCE (6.8E-04), 1,2-dichloropropane (3.0E-04), CT (2.6E-04), 1,2-dichloroethane (1.0E-04) | 5.1E+02      | 4.3E+02      | 1,2,3-trichloropropane (adult 2.1E+02, child 1.8E+02), CF (adult 2.0E+02, child 1.7E+02), TCE (adult 8.4E+01, child 7.1E+01), PCE (adult 6.0E+00, child 5.0E+00), 1,2-dichloropropane (adult 5.7E+00, child 4.8E+00), 2-butanone (adult 2.5E+00, child 2.1E+00), 1,2-dichloroethane (adult 1.6E+00, child 1.3E+00), CT and VC (adult 1.2E+00, child 1.0E+00) |
| <b>Total</b>   | 3.2E-01                |                                                                                                                      | 6.1E+02      | 5.9E+02      |                                                                                                                                                                                                                                                                                                                                                              |

### 7.4.3 Core of the Plume - IAQ

#### 7.4.3.1 Worker

The cumulative cancer risks and non-cancer HIs by exposure pathway for a current on-site worker's exposure to COPCs in the IAQ are summarized in [Table 7-7](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment D, [Table D.9](#).

The total ELCR for a worker's exposure to COPCs in groundwater via tapwater from all pathways is 2.7E-05. The ELCR for groundwater ingestion exposure is 2.3E-05; primary contributors are VC, TCE and CF. The ELCR for groundwater dermal exposure is 1.1E-06, with the primary contributors being VC, TCE and PCE.

The total non-cancer HI is one. See [Table 7-7](#).

**Table 7-7 Core of Plume: Worker's Exposure to IAQ Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                              | Hazard Index | Primary COPCs |
|----------------|------------------------|--------------------------------------------|--------------|---------------|
|                | <i>Lifetime</i>        |                                            |              |               |
| Ingestion      | 2.3E-05                | VC (1.5E-05), TCE (5.0E-06), CF (1.3E-06)  | 9.6E-01      | --            |
| Dermal         | 1.1E-06                | VC (5.3E-07), TCE (3.4E-07), PCE (1.7E-07) | 8.7E-02      | --            |
| <b>Total</b>   | 2.4E-05                |                                            | 1.0E+00      |               |

#### 7.4.3.2 Resident

The cumulative cancer risks and non-cancer HIs by exposure pathway for a future on-site resident adult and child's exposure to COPCs in the IAQ are summarized in [Table 7-8](#) below. Chemical-specific cancer risks and non-cancer HQs are presented in Attachment D, [Table D.10](#).

The total ELCR for a resident's exposure to COPCs in groundwater via tapwater from all pathways is 1.4E-03. The groundwater inhalation pathway via showering contributes the most to

this risk, with an ELCR of 1.1E-03; the primary contributors are VC, TCE and CF. The ingestion pathway has an ELCR of 3.1E-04, its primary contributors are VC and TCE. The dermal pathway has an ELCR of 2.5E-05, its primary contributors are VC, TCE and PCE.

The total non-cancer HI is 1.8E+01 for an adult and 1.8E+01 for a child. The groundwater inhalation pathway contributes the most to these HIs with an HI at 1.5E+01 for an adult and HI of 1.3E+01 for a child; PCE and TCE are the primary contributors. The groundwater ingestion pathway for an adult has a HI of 2.7E+00; the child has a HI of 4.5E+00, also resulting from potential exposure to TCE and PCE. See [Table 7-8](#).

**Table 7-8 Core of Plume: Resident's Exposure to IAQ Groundwater**

| Exposure Route | Cumulative Cancer Risk | Primary COPCs                                              | Hazard Index |              | Primary COPCs                                                          |
|----------------|------------------------|------------------------------------------------------------|--------------|--------------|------------------------------------------------------------------------|
|                | <i>Lifetime</i>        |                                                            | <i>Adult</i> | <i>Child</i> |                                                                        |
| Ingestion      | 3.1E-04                | VC (2.7E-04), TCE (3.1E-05), the others are E-06           | 2.7E+00      | 4.5E+00      | TCE (adult 1.7E+00, child 2.8E+00), PCE (adult 4.4E-01, child 7.3E-01) |
| Dermal         | 2.5E-05                | VC (1.8E-05), TCE (4.1E-06), PCE (1.5E-06)                 | 5.7E-01      | 8.6E-01      |                                                                        |
| Inhalation     | 1.1E-03                | VC (8.6E-04), TCE (1.0E-04), CF (7.9E-05), others are E-06 | 1.5E+01      | 1.3E+01      | TCE (adult 1.2E+01, child 1.1E+01), PCE (adult 1.9E+00, child 1.6E+00) |
| <b>Total</b>   | 1.4E-03                |                                                            | 1.8E+01      | 1.8E+01      |                                                                        |

#### 7.4.4 Core of the Plume Risk Summary

Results of this sensitivity analysis indicate that there may be potential for unacceptable risk to current/future on-site workers and future on-site residents from exposures to COPCs in the Fluvial aquifer and IAQ. As noted above, the MAQ was not evaluated as there are limited data and the results of a Core of Plume analysis would have been identical to the initial results.

In comparison to the results presented in [Sections 6.3.1](#) and [6.3.2](#), the cancer risks in the Fluvial aquifer using the Core of the Plume data set are two orders of magnitude greater; the non-cancer HIs are an order of magnitude higher. In the IAQ, the cancer risks and non-cancer HIs are one order of magnitude greater.

As this sensitivity analysis utilized the highest concentrations in the data set to represent the core of contamination in each aquifer, it is a worst-case scenario and may not represent realistic exposure. This is further supported by the presence of the LUCs at DDMT that limit exposure to groundwater.

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## 8 Review of 2000 Soils HHRA

### 8.1 Overview and Soils HHRA Methodology

#### 8.1.1 Overview

HDR has conducted a review of the soil component of the 2000 MI RI HHRA for FU1 through FU6 to determine if, under current guidance and toxicity values, the conclusions of the Soils HHRA are still valid and whether or not the remedial actions completed since that time are protective. The FUs, which were designated based on operational history, expected use and location, are shown on [Figure 1-1](#). Recommendations are provided regarding whether or not the soil evaluations need to be updated.

The Soils HHRA included an assessment of human health impacts from surface and subsurface soil; HDR's review includes assessment of the methodology and a comparison of analytical data for COPCs to current risk-based human health screening levels.

#### 8.1.2 Soils HHRA Methodology

The 2000 MI RI Soils HHRA had four primary components:

1. Identify COPCs – Analytical data generated from the 2000 MI RI were compared to the USEPA Region 3 Risk-Based Concentrations (RBCs) for soil (target risk of 1E-06 and target HQ of 0.1; now incorporated into the nationwide USEPA RSLs) to determine COPCs in the 2000 HHRA, which is described in Section 7.3 and Appendix D, Table D.1 of that report. Site-wide COPCs for soil were determined to be VOCs, SVOCs, pesticides, PCBs and metals.
2. Exposure assessment – COPC migration pathways, potential receptors and magnitude of exposure to COPCs were determined. EPCs were calculated using 95 percent UCLs and incorporated in the exposure doses. Exposure doses were calculated for each COPC and complete exposure pathway. The Soils HHRA evaluated a maintenance worker, lumberyard/factory worker, utility worker, landscaper, industrial/commercial worker, shelter/transient resident, long-term resident and recreator.
3. Toxicity assessment – Toxicity values and potential health effects of the COPCs were identified.
4. Risk characterization – Cancer risks and HQs were calculated for each COPC using the exposure doses and toxicity values. The COPCs that were determined to be COCs in this step, as they contributed the most to the cancer risks and HQs, and were carried through in the MI ROD were lead, arsenic and dieldrin. Polycyclic aromatic hydrocarbons (PAHs) were not carried forward as high PAH detections were associated with transportation infrastructure (CH2M HILL 2001).

The risks from these COCs were largely addressed in removal actions performed prior to completion of the 2001 MI ROD, at locations shown on [Figure 4-2](#). These actions and resulting

residual soil contaminant concentrations were reflected in the EPCs calculated for each FU and other screening sites included in the Soils HHRA.

Two additional soil removal actions were completed after the Soils HHRA; one adjacent to Building 949 in FU4, where surface soil containing elevated concentrations of chromium and lead adjacent to Building 949 in FU4 was removed in 2001; and the second at BRAC Parcels 35 & 28 in the southwest corner of FU3, where contaminated soils containing elevated metals and PAHs were removed in 2000.

While the overall methodology in the Soils HHRA was relevant and appropriate, changes in some details of the methodology have changed since 2000, as noted in [Section 6.3.4](#). These changes relate to exposure factors, evaluation of inhalation risks, toxicity values and the effects of chemicals now being identified as having a MMOA.

One change relevant to DDMT soils is that the methodology for applying the toxicity values for both dioxins and PAHs has changed. The benzo(a)pyrene (BaP) cancer toxicity value is now applied as the relative value for other PAHs, modified by multiplying the toxicity equivalence factors (TEFs) for each PAH (e.g., for benzo(b)fluoranthene, the oral slope factor of 1 (mg/kg-day)<sup>-1</sup> for BaP, multiplied by the TEF of 0.1). These TEFs have been incorporated in the current RSL values, which are presented in Attachment F [Table 1a](#), and are further described in the USEPA *RSL User's Guide*, *Section 2.3.5* (USEPA 2019b) and USEPA *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons*, Table 7 (USEPA 1993). Similarly, TEFs for the dioxins, furans and dioxin-like PCBs are now applied, with a range of 0.0001 to 1 (Van den Berg et al. 2006; USEPA 2019b) used as a multiplier for the 2,3,7,8-tetrachlorodibenzo-pdioxin (TCDD) value.

## 8.2 Soils HHRA Issues Considered in Current Review

### 8.2.1 Background Concentrations

The 2000 MI RI included a determination of background concentrations of contaminants in order to evaluate whether site operations or releases of hazardous materials contributed to contaminant concentrations exceeding background levels. The background levels were included as a criterion in Section 7.3 of the 2000 MI RI and in the FU-specific COPC selection tables; however, review of the tables indicates that no contaminants were eliminated from the COPC list based on background levels.

Background soil samples, 22 surface soil and 22 subsurface soil, were collected at the Depot perimeter and at off-site locations to assess the potential impact of Depot operations on contaminant concentrations in soil (CH2M HILL 1998). Data were compared to the USEPA Region 3 RBCs; exceedances were identified for metals, PAHs and dioxin/furans.

- The individual constituent background levels in soil, provided in 2000 MI RI [Tables 3-10](#) and [3-11](#), are included in Attachment F.
- Arsenic had a range of 4.2 to 27.7 mg/kg in surface soil; the background value was initially noted as 21.8 mg/kg, but was modified to 16.5 mg/kg after outlier removal.



Arsenic had a range of 3.1 to 14.1 mg/kg in subsurface soil; the background value was 17.0 mg/kg.

- Lead had a range of 11.7 to 73.3 mg/kg in surface soil; the background value was initially noted as 42.6 mg/kg, but was modified to 30 mg/kg after outlier removal. Lead had a range of 6.9 to 22.7 mg/kg in subsurface soil; the background value was 23.9 mg/kg.
- Dioxins and furans were detected in most background soil samples, generally at higher concentrations at the surface than at depth and included octa- and hepta-isomers, indicating an atmospheric deposition source.

Surface soil concentrations for metals, VOCs, SVOCs, pesticides and PCBs were higher at the Depot perimeter than at off-site locations. This difference is noted in the 2000 MI RI as likely being a result of the industrial vs. residential and recreational land uses in these locations. The 2000 MI RI also states that higher concentrations for xylene and phthalates at the Depot perimeter likely result from off-site vehicular traffic around the facility.

The maximum arsenic concentration detected in non-background samples at the MI was 66.3 mg/kg in surface soil and 34.2 mg/kg in subsurface soil, as noted in Table 6-4 of the 2000 MI RI. The concentrations are within the range of background concentrations identified for the site and in the following references:

- The range of background arsenic concentrations in soil for the Eastern United States is noted as being 1 to 73 mg/kg, with an arithmetic mean of 7.5 mg/kg in a United States Geological Survey publication, *Selenium, Fluorine and Arsenic in Surficial Materials of the Conterminous United States* (Shacklette et. al. 1974).
- A 2003 study entitled *Soil Background Supplemental Data Set for the East Tennessee Technology Park, Oak Ridge, Tennessee* indicated the range of background concentrations was 0.77 to 15 mg/kg, with a 95 percent UCL of 14.95 mg/kg (Bechtel Jacobs 2003).
- *An Analysis of Soil Arsenic Records of Decision* documented arsenic cleanup levels at Superfund sites; the concentration range was 3.2 to 20 mg/kg in soil where attainment of background concentrations was used as the basis for the cleanup, and the range was 2 to 305 mg/kg including both background- and risk-based goals (Davis et. al. 2001).

## 8.2.2 Dioxins/Furans

### 8.2.2.1 Removal Action

Wooden pallets were treated with PCP at the MI during the 1950s; operations were discontinued in 1971. Wood pallets were treated at the PCP Dip Vat Area and the Underground PCP Tank Area (Screening Sites 42 and 43). The pallets were dried near Screening Site 46 (approximately 115 ft south of Building 720 and 125 ft west of 6<sup>th</sup> Street). The general area, located in FU4, is shown on [Figure 4-2](#). A removal action was conducted in 1985; background information and the removal action are described in the *Summary Report, On-site Remedial Activities at the Defense Depot Memphis* (OHM 1986).

Analysis of a sample of the liquid taken from the dip vat by DLA personnel revealed the presence of PCP. Further analytical investigation by U.S. Army Environmental Hygiene Agency investigators of the liquid in Building 737 revealed the presence of appreciable levels of higher chlorinated dioxins and furans (e.g., penta-, hexa-, hepta-, and octa-isomers). Chlorinated dioxins and furans are contaminants often produced in the manufacture of the wood preservative PCP and other chlorinated organic compounds.

The liquids and sludge within the PCP Dip Vat tank were removed and placed in 55-gallon drums. After initial attempts to decontaminate the structure, Army and Tennessee Department of Health and Environment (TDHE, now TDEC) directed the building be disassembled for disposal. The 12,000 gallon PCP storage tank, which had only a small amount of oily liquid remaining, was excavated; the tank was then cut in pieces, sand blasted and pressure-washed prior to placement in a roll-off for storage prior to disposal. The tank was determined to be structurally sound but leakage was apparent at joints in the piping to the dip vat based on observations during removal and presence of stained soil.

Following removal of the structure, soil samples were collected from borings on a grid within the dip vat and storage tank area to develop a depth and perimeter profile of the planned excavation. The target soil cleanup level of 200 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) of total dioxin and furan isomers was established in consultation between Army, USEPA and TDHE. Soil contamination above the cleanup level was observed to a depth of 25 ft at the north end of the dip vat structure. Soil was excavated to average depths of 14 ft at the PCP storage tank; 10 ft beneath the dip vat, adjacent rollers and pump house; and 2 to 5 ft in adjacent areas. Soil with total dioxin and furan concentrations above the cleanup level was left in place below the excavated depth at the north end of the dip vat structure. Adjacent areas east and north of the excavation area had 3 to 6 inches of soil removed and approximately 2 inches of gravel placed for cover.

The excavated soil was sampled to determine residual contamination. Soil with total dioxin and furan concentrations above the cleanup level was placed in containers and stored for off-site disposal. Soil with concentrations less than the cleanup level was used for backfill along with clean soil from off-site sources. The excavated area was backfilled and covered with gravel. In spring 1988, the contaminated soil and debris was transported and disposed at a hazardous waste disposal facility following approval by USEPA and TDHE.

In addition to its use for wood treatment, the dip vat liquid was also suspected of having been mixed with waste oil and sprayed in the surrounding area for dust control. Samples were collected in six areas where spraying was suspected; individual soil samples were composited for each area and analyzed for TCDD. The sample for Area 2 contained TCDD at  $5.6 \mu\text{g}/\text{kg}$ ; the other sample results for TCDD were  $<0.05$  to  $0.85 \mu\text{g}/\text{kg}$ . The EPA residential clean-up level at the time was reported to be  $1 \mu\text{g}/\text{kg}$ . Area 2 was divided into six sub-areas and composite samples were collected from each sub-area at depth ranges of 0 to 4 inches and 4 to 8 inches; the samples were analyzed for TCDD and for other dioxin and furan isomers. The sample results for TCDD were below the cleanup level at concentrations of  $<0.05$  to  $0.5 \mu\text{g}/\text{kg}$ ; other dioxin and furan isomers were detected at higher concentrations and the shallow samples had

higher concentrations than the deeper samples. The maximum concentrations for the other analytes in the shallow samples were polychlorinated dibenzo-p-dioxin at 2.2 µg/kg, hexachlorodibenzo-p-dioxin at 10 µg/kg, heptachlorodibenzo-p-dioxin at 230 µg/kg, octachlorodibenzo-p-dioxin at 1600 µg/kg, 2,3,7,8,-tetrachlorodibenzofuran (TCDF) at 0.3 µg/kg, polychlorinated dibenzofuran at <0.1 µg/kg, hexachlorodibenzofuran at 23 µg/kg, heptachlorodibenzofuran at 190 µg/kg and OCDF at 230 µg/kg. The Army, in consultation with TDHE and USEPA, had 6 to 12 inches of gravel placed over the impacted area of 3.5 acres north of Building 737.

#### 8.2.2.2 Land Use Restrictions

Due to the presence of soils contaminated with dioxins and furans remaining in place, requirements were established for ground cover and access.

1. TDHE letters dated 26 September 1985 and 16 October 1985 addressed the area suspected of having waste oil with PCP sprayed for dust control and TCDD concentrations below the EPA action level (5-6 parts per billion [ppb]). The October letter stated conditions for the agreed approach to place 6 to 8 inches of compacted gravel:
  - a. The graveled area must be placed "off limits" to any and all vehicular traffic.
  - b. The area must be indicated as a "non-use" area on the facility development plat.
  - c. Future plans for utilization of the area must be approved by the Department.
  - d. Prior to placement of gravel the entire area should be sprayed with water to prevent dusting.
2. Restrictions on the PCP Dip Vat area are stated in the MI NLUR recorded on 26 January 2005. The MI NLUR states two site-wide restrictions and one restriction for the PCP Dip Vat area. The site wide restrictions are: No residential land use or other child-occupied facilities, and No production/ consumptive use of groundwater or drilling groundwater wells on the MI. The PCP Dip Vat area restriction is:
  - a. No digging in soil material 10 ft below the land surface due to elevated PCP soil concentrations at the Former PCP Dip Vat Area (Solid Waste Management Unit [SWMU] 42) and the Former Underground PCP Tank Area (SWMU 43). A map with surveyed coordinates of the 'no dig' areas was included in the NLUR.
3. The MI LUCIP (CH2M HILL 2004b) references the MI NLUR but does not mention the PCP Dip Vat restrictions.

#### 8.2.2.3 2003 Investigation

Additional investigation was performed in 2003 as required by TDEC for closure of SWMU 42, Former PCP Dip Vat Area. The objective was to evaluate the presence or absence of PCP and PCP degradation products in soil; the PCP degradation products are 2,3,4,6-tetrachlorophenol, 2,4,5-trichlorophenol (TCP), 2,4,6-TCP, dichlorophenol, 2-chlorophenol, and phenol. In addition four samples were collected for analysis of dioxins and furans. The report (CH2M HILL 2004b) summarizes previous investigations and presents the 2003 soil testing results and results of fate

and transport modeling for SWMU 42. The report states the area of soil contamination north of Building 737 was due to its use for drying the pallets rather than to use the waste oil with PCPs for dust control. Also, the surface of the former PCP Dip Vat, the PCP UST and the area to the east of the former dip vat had been covered by concrete at some time after the removal action. Soil samples were collected from four borings within the limits of the 1985 soil excavation and three borings to the southeast near the PCP UST excavation.

Of the detected dioxins and furans, the higher chlorinated, more persistent isomers were the most commonly detected. Only TCDD was reported to have an EPA Region 9 PRG of 0.016 mg/kg for industrial direct contact; the concentration of TCDD in all samples was below this value.

Concentrations of dioxins and furans for each sample were transformed into a total TCDD toxicity equivalent (TEQ) concentration. The toxic equivalency factor (TEF), which relates the compound to the toxicity of TCDD TEFs were obtained from the 1998 World Health Organization values (Van de Berg, et al. 1998). The individual TEQ values were then summed to determine the total TEQ. The TCDD TEQ background values at the MI are 0.01 µg/kg in surface soil and 0.006 µg/kg in subsurface soil (CH2M HILL 2000). TEQ values slightly exceeded these background values at sample points SB-114 (zero to 6 ft bgs) and SB-115 (6 to 13 ft bgs). The USEPA action level for the TCDD TEQ was 1 µg/kg for residential soils and 5 µg/kg to 20 µg/kg for industrial soils (EPA 1998a). TEQs for all samples were below 1 µg/kg.

TDEC approved the PCP Dip Vat Closure in a letter dated 15 July 2008.

#### 8.2.2.4 Conclusions

There were no soil screening levels for dioxins/furans available at the time the 2000 MI RI was completed. For this review, the maximum detected dioxin and furan congener-specific concentrations and the calculated TCDD equivalent surface soil concentrations ([Table 4a](#) in Attachment G) were compared current USEPA Industrial Soil RSLs. The TCDD equivalent data incorporates recognized TEFs that allow an estimation of the overall toxicity of mixtures of dioxins and furans. The data indicated exceedances for TCDD equivalent data in soil samples from FU3 and FU4 and for congener-specific concentrations in FU4.

Dioxin and furan concentrations in background samples are shown on [Table 3-10](#) in Attachment F. The range of background concentrations for TCDD equivalents is 0.001 to 0.02 µg/kg in surface soil, less than 0.001 to 0.01 µg/kg in subsurface soil, less than 0.001 to 0.009 µg/kg in sediment and less than 0.001 to 0.03 nanograms per liter (ng/L) in surface water. (The minimum concentration detected in background subsurface soils, sediment and surface water samples is shown as 0.000 in the 2000 MI RI report.) The background values are 0.010 µg/kg in surface soil, 0.006 µg/kg in subsurface soil, 0.009 µg/kg in sediment and 0.018 ng/L in surface water. The Industrial soil RSL for TCDD equivalent in soil is 0.022 µg/kg, which is greater than the background value.

In FU3, the calculated, maximum concentration in surface soil for TCDD equivalent is 0.0103 µg/kg, slightly above the background value, but less than the Industrial RSL. There are

exceedances of other concentrations of dioxins/furans when compared to the Industrial RSL for TCDD equivalent (e.g., octachlorodibenzo-p-dioxin). The concentrations of dibenzofuran are less than its Industrial RSL of 150 µg/kg. The maximum concentration in subsurface soil for TCDD equivalent is 0.013 µg/kg (MI RI Table 18-6), which is also less than the Industrial Soil RSL.

In FU4, the calculated, maximum concentration for TCDD equivalent is 0.083 µg/kg, approximately an order of magnitude greater than the background value and slightly higher than the Industrial RSL. See Attachment G, [Table 4a](#). In addition, the maximum concentrations for 10 dioxin/furan congeners are greater than the Industrial Soil RSLs for TCDD equivalent. The maximum concentration in subsurface soils for TCDD equivalent is reported as 13 µg/kg (MI RI Table 22-7); given the range of other values for the UCLs and EPCs in the 2000 MI RI is orders of magnitude lower, the reported concentration is considered to be a typographical error. Additional sampling to substantiate the maximum concentration for TCDD equivalent in subsurface soils is planned, as discussed in [Section 8.5](#).

There are no exceedances of the USEPA Industrial Soil RSLs in the other FUs (Attachment G, [Table 4a](#)).

There are no exceedances of human health screening levels in sediment, as there are no generic human health sediment criteria. These are generally to be developed on a site-specific basis and that was not done as part of the 2000 MI RI or included in the scope of this review. Surface water detected concentrations were compared to their respective state and USEPA water quality criteria; including human health criteria that are based on the consumption of both water and organisms and reflect surface water designations, e.g., use as a domestic water supply or for contact recreation. Potential ecological risk due to dioxins/furans in sediment and surface water is discussed in [Section 9](#).

Due to the detection of dioxin/furan concentrations at levels above background and/or screening levels in some samples within FU3 and FU4, the protocol included in the April 2013 *Tri-Service Environmental Risk Assessment Workgroup Questions/Answers on Dioxin* (TSERAWQ, 2013) should be used as guidance in determining the need for further assessment. This document can be found at <https://clu-in.org/download/contaminantfocus/dioxins/dioxin-fags-2013.pdf>.

The document states that environmental investigations should focus on the potential for direct-contact pathways for human and ecological receptors, as dioxins are generally not sufficiently soluble to pose a leaching threat to underlying groundwater. Given that the Dip Vat Area, where dioxin exceedances were identified also has LUCs for PCP, which can migrate in groundwater, both should be considered in a coordinated manner if further evaluation of FU3 and FU4 is performed.

The document includes the following considerations regarding the need for further assessment; the applicability to DDMT is added in the underlined text.

- *Under which circumstances should I consider sampling and analysis for dioxin at my site?*

Sampling and analysis for dioxins should be considered when the CSM and historical information indicates a release from DOD operations may have occurred.

This appears to be the case at DDMT, e.g., in the Dip Vat Area.

- *Does the TEQ method change for non-cancer risks?*

Most previous site-specific dioxin risk assessments focused upon cancer risks only. The publication of a non-cancer reference dose now allows for these health risks to be calculated. The standard practice of using TCDD as the reference congener to assess the cancer and non-cancer toxicity of dioxins as toxicity equivalents has not changed. The TEQ method has been in use for some time and the new toxicity values do not change its implementation in risk assessments.

At this juncture, the groundwater HHRA included in this document has been updated to address non-cancer effects; soils have not yet been evaluated in an updated quantitative risk assessment.

- *Under which circumstances should I consider sampling and analysis for dioxin at my site?*

Sampling and analysis for dioxins should be considered when the CSM and historical information indicates a release from DOD operations may have occurred.

This appears to be the case at DDMT, e.g., in the Dip Vat Area.

- *What are the major risk management decisions potentially affected?*

A decision on whether to reassess where dioxin has been or continues being managed with remedial action. *Determinations of whether to characterize possible dioxin contamination at sites should be made on a site-specific basis, considering the CSM and whether DOD operations might have led to dioxin contamination above background levels.*

At DDMT, it appears that the Dip Vat area, in particular the use of PCP has resulted in soil contamination with dioxins.

- *If I cleaned up dioxin in the past do I need to evaluate the protectiveness of that cleanup? Do I do this now or during a periodic- or 5-year review?*

Sites with remedies in place where dioxins are contaminants of concern may in some cases have to be re-evaluated. Assessment should take place as part of the regular 5-year or *periodic review process*.

The HHRA and SLERA update and reviews are part of a periodic review process, a protectiveness review is appropriate at this juncture.

The *Fact Sheet on the Management of Dioxin Contaminated Soils* (USEPA 2011c) is meant to assist site managers in determining whether dioxin-contaminated soils are best managed on or off site and should be considered in making a determination on the need and type of remedial action, particularly as it relates to Land Disposal Restrictions (LDRs). LDRs are applicable to dioxin-contaminated soils when they are: generated/excavated and placed in a land disposal



unit. If the dioxin- contaminated soils are not removed from the land, LDRs do not apply. See <https://semspub.epa.gov/work/HQ/174546.pdf>

Also note that the Dioxin Listing Rule (50 FR 1987) designates certain wastes containing particular chlorinated dibenzo-p-dioxin, chlorinated dibenzofurans and chlorinated phenols as acute hazardous waste. This would include PCP, which is suspected of being the primary source of dioxins.

### 8.3 Review of Current Conditions using 2000 MI RI Data by FU

The 2000 MI RI conducted site-specific HHRAs with high-end potential exposures and also conducted FU-wide HHRAs using reasonable maximum exposures.

For the site-specific HHRAs, a surrogate site was evaluated instead of evaluating the approximately 80 sites identified within the MI. Depending on the exposure scenario evaluated, a surrogate site or a single highest concentration data point for worst-case exposure concentrations was used to estimate risk for a future hypothetical resident. An exposure unit for a resident is assumed be a 0.5-acre lot, represented by the highest preliminary risk evaluation (PRE) data point within the FU. A maintenance worker's exposure unit is the entire area within an FU, while an industrial worker exposure is assumed to be a smaller exposure unit, represented by a surrogate site. Table 7-1 in the 2000 MI HHRA presents the rationale for the surrogate site and residential risk data point selection, and a list of the various exposure units for each of the FUs within the MI.

For the FU-wide HHRA, the data were combined from samples collected within the FU during three sampling events at BRAC parcels and the screening and RI sites. The sampling consisted of 580 surface soil samples collected using a clean stainless-steel hand auger or scoop to retrieve soil from ground surface to 2 ft bgs and 40 percent of these samples were used to determine nature and extent of contamination. There were 427 subsurface soil samples collected from 154 vertical soil borings that were installed by either direct-push, hollow-stem auger or rotasonic methods and 65 percent were used to determine the presence of COPCs in the area. The FU-wide HHRAs also evaluated residential and industrial land use scenarios.

[Table 1a](#) in Attachment F presents the EPCs at 0-2 and 0-10 ft bgs that were used in the FU-wide HHRAs. Comparison of the FU-wide EPCs and the current USEPA Residential and Industrial Soil RSLs (at a target cancer risk of 1E-06 and target hazard quotient of 0.1) was performed to evaluate whether or not the conclusions of the Soils HHRA remain valid (see Attachment F, [Table 1a](#)). A majority of the FUs are designated for industrial use and the subsequent evaluation considers only the Industrial Soil RSLs in the comparison to EPCs. Limited areas of FU-6 are designated as unrestricted use and unrestricted exposure (UU/UE) and in those areas, the evaluation considers both the Industrial and Residential Soil RSLs in the comparison to EPCs.

Table 1b in Attachment F presents screening risks and hazards that were calculated using the EPCs and RSLs (at a target cancer risk of 1E-06 and target hazard quotient of 1, which is the point of departure for acceptable hazards), expressed in the equations below:

$$\text{Screening Cancer Risk} = \frac{EPC}{RSL_{cancer}} \times \text{Target Risk}$$

$$\text{Screening Noncancer Hazard} = \frac{EPC}{RSL_{noncancer}} \times \text{Target Hazard Quotient}$$

Table 1c in Attachment F presents a summary for each FU of the cumulative risk and hazard index (HI), which are the sum of the individual chemical-specific cancer risks and separately, the sum of the individual chemical-specific hazards.

### 8.3.1 FU1

The comparison of detected concentrations to RSLs within FU1 indicates that in both shallow (0-2 ft deep) and deeper (0-10 ft) soils, total petroleum hydrocarbons (TPH), benzo(a)pyrene, dieldrin, Aroclor 1260 and arsenic, were detected at levels exceeding their respective Industrial RSLs. Dibenz(a,h)anthracene exceeds its Industrial RSL in the shallow soils and meets its Industrial RSL in the deeper soils. The cumulative risks and HI are within the acceptable risk range and less than the acceptable limit of one, respectively, in both the shallow and deep soils. The cumulative cancer risk is 2.8E-05 and HI is 0.32 in shallow soils; the cumulative cancer risk is 5.3E-05 and HI is 0.39 in the deeper soils.

### 8.3.2 FU2

Only shallow (0-2 ft bgs) soil data are available for this area. The inorganic constituents, arsenic and chromium, exceed their respective Industrial RSL in surface soil, as does dieldrin. Total chromium concentrations exceed hexavalent chromium screening values, but not trivalent values. The cumulative risks are within the acceptable risk range and the HI values are less than the acceptable limit of one in the shallow soils, as shown on Table 8-1.

**Table 8-1 Cumulative Cancer Risks and Hazard Index Values in FU-2 Surface Soils**

| Functional Unit Area | Cumulative Cancer Risk | Hazard Index |
|----------------------|------------------------|--------------|
| FU-2 Ballpark        | 1.5E-05                | 0.18         |
| FU-2 Golf Course     | 3.6E-05                | 0.41         |
| FU-2 Playground      | 1.2E-05                | 0.19         |
| FU-2 Surface Soil    | 2.4E-05                | 0.26         |

### 8.3.3 FU3

Within FU3, TPH, arsenic and chromium exceed their respective Industrial RSLs in both shallow (0-2 ft deep) and deeper (0-10 ft) soils. As in other FUs, total chromium concentrations exceed



hexavalent chromium screening values, but not trivalent values. The cumulative risks are within the acceptable risk range and HI values are less than or meet the acceptable limit of one. The cumulative cancer risk is  $6.3\text{E-}06$  and HI is 1.1 in the shallow soils; the cumulative cancer risk is  $5.2\text{E-}06$  and HI is 0.90 in the deeper soils. Parcels 35 & 28 within FU3 were subject to the post-RI soil removal action, described in [Section 8.4.2](#).

#### 8.3.4 FU4

Within FU4, TPH, arsenic, chromium and dioxins exceed the Industrial RSLs in both shallow and deeper soils. Dieldrin and Aroclor 1260 exceeds the Industrial RSL in the shallow soils only. Total chromium concentrations exceed hexavalent chromium screening values, but not trivalent values. The cumulative risks are within the acceptable risk range; however, the HI values are greater than one. The cumulative cancer risk is  $3.7\text{E-}05$  and HI is 4.2 in the shallow soils whereas the cumulative cancer risk is  $5.0\text{E-}05$  and HI is 4.7 in the deeper soils; the primary contributor is dioxin. Building 949 in FU4 was subject to a post-RI soil removal action, described in [Section 8.4.1](#).

#### 8.3.5 FU5

Within FU5, dieldrin and arsenic exceed the Industrial RSLs within shallow and deeper soils. Benzo(a)pyrene exceeds its Industrial RSL in the shallow soils and total chromium only exceeds the hexavalent screening value in the deeper soils. The cumulative risks are within the acceptable risk range; HI values are less than one. The cumulative cancer risk is  $1.9\text{E-}05$  and HI is 0.11 in the shallow soils; the cumulative cancer risk is  $1.4\text{E-}05$  and HI is 0.13 in the deeper soils.

#### 8.3.6 FU6

Within FU6, dieldrin, Aroclor 1260 and arsenic exceed the Industrial RSLs in both shallow and deeper soils; benzo(a)pyrene exceeds its Industrial RSL in shallow soils only. The cumulative risks are within the acceptable risk range and the HI values are less than one. The cumulative cancer risk is  $2.4\text{E-}05$  and HI is 0.11 in the shallow soils; whereas the cumulative cancer risk is  $2.0\text{E-}05$  and HI is 0.074 in the deeper soils.

As there are limited areas of FU-6 that are designated as UU/UE, as shown on [Figure 4-2](#), the shallow soil EPCs in FU-6 were also compared to the Residential RSLs. The EPCs of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, dieldrin, Aroclor 1260 and arsenic in the shallow soils exceed their Residential RSLs. The cumulative risk of  $1.5\text{E-}04$  exceeds the acceptable risk range and the HI of 1.4 exceeds the threshold of one; the primary contributors are PCB Aroclor 1260, benzo(a)pyrene, dieldrin and arsenic. Most of the data incorporated in the EPCs were collected from areas outside of the UU/UE area (see MI RI Figure 28-2 and Table 28-2) to evaluate historical sources of contamination in those areas, e.g., pesticides, PAHs and PCBs. Therefore, there is uncertainty in using these data to evaluate potential residential risks and hazards in this portion of FU-6.

## 8.4 Review of Removal Actions Performed After 2000 MI RI in Current Conditions

Figure 4-2 shows the FU boundaries and the soil removal actions on the MI, including those completed after the 2000 MI RI. In order to provide a more accurate characterization of potential risks remaining at the site, the post-RI removal actions were reviewed.

### 8.4.1 Removal Action - Building 949 in FU4

Lead concentrations in soil at the southeastern corner of Building 949 exceeded industrial worker health-protective standards. This building is a fabric-tension structure used to temporarily store steel and tents. The removal action, described in *Remediation Report, Removal Action at Building 949* (Jacobs Federal Programs 2002), consisted of three rounds of excavation:

- Soil was initially excavated to a depth of 1 ft in the area shown on remediation report Figure A-1, provided in Attachment F (Building 949). Post-excavation samples had elevated levels of both lead and chromium; lead concentrations at three locations exceeded the industrial cleanup level of 1,536 mg/kg and total chromium concentrations at nine locations exceeded the industrial cleanup level of 450 mg/kg.
- The first over-excavation (Figure A-2 in Attachment F) extended a portion of the excavation to a depth of 2 ft and widened the excavated area further to the south and east of Building 949. Post-excavation samples exceeded the industrial cleanup levels for lead at one location and chromium at four locations.
- A second over-excavation (Figure A-3 in Attachment F) deepened a portion of the excavation to the south of Building 949 to 2 ft; reported results were below the respective lead and chromium cleanup levels at the time and the soil remediation was considered complete.
- The ground surface was restored with crushed rock to original grade following completion of the removal action.

Remediation goals in the remedial action report were based on 2000 USEPA Region 9 Preliminary Remediation Goals (PRGs, now incorporated into the USEPA RSLs) for Industrial use: 1,536 mg/kg for lead and 450 mg/kg for chromium. Review of the final confirmation sample results indicates that lead concentrations are below the PRG, but chromium concentrations are greater than the PRG in two samples (547 mg/kg at 949B-2 and 512 mg/kg at 949B-5).

The final confirmation sample results were also compared to the USEPA Industrial Soil RSLs (target cancer risk of 1E-06 and HQ of 0.1) for chromium and lead (Table 2 in Attachment F). Lead results are below the Industrial RSL of 800 mg/kg. Total chromium results exceed the hexavalent chromium Industrial RSL of 6.3 mg/kg, but not the Industrial RSL value of 180,000 mg/kg for trivalent chromium.

### 8.4.2 Removal Action - Parcels 35 & 28 in FU3

BRAC Parcels 35 & 28 were used for painting, sandblasting and plating operations and for storage of acids, paints, and cleaning solvents, respectively. Metals were detected at elevated concentrations in areas associated with plating shop operations (i.e., Sites 31, 32, and 33) in Parcel 35. The removal action was conducted to address elevated lead concentrations. The removal action was described in *Remediation Report, Removal Action in Parcels 35 and 28 (Old Paint Shop and Maintenance Area)* (Jacobs-Sverdrup 2000):

- Excavation was completed to 1 ft in multiple locations as part of overall building demolition, underground storage tank (UST) removal and soil cleanup within FU3. Excavation Area A was located adjacent to Perry Road and Excavation Area B encompassed seven separate areas near Buildings 1084, 1087, 1088 and 1089. The excavations were all dug to a depth of 1 ft bgs; additional excavation was completed in a trench along 25<sup>th</sup> Street and continuing through nearby sections of FU3. The areas excavated are shown on [Figure A-1](#) of the removal action report, provided in Attachment F (Parcels 35 & 28).
- The excavated areas were backfilled with “general fill” and completed with grass seed or with 6 inches of aggregate, as noted on [Figure A-1](#) in Attachment F (Parcels 35 & 28).

The reported confirmation sample data for the excavations (Table B-2 for Area B, Table B-4 for Trench Area) were compared to the USEPA Industrial RSLs in this review. The original remediation goals based on 2000 USEPA Region 9 PRGs are also shown ([Tables 3 and 4](#) in Attachment F).

The data from the removal actions indicate that arsenic remains at concentrations exceeding the screening level in place at that time (Industrial RSL of 20 mg/kg), and the current Industrial RSL (3 mg/kg). However, the levels that remain are within the range of background samples, as noted in [Section 8.2.1](#). The other contaminants in [Table 4](#) of Attachment F have concentrations that are less than their Industrial RSLs.

Total chromium results only exceed the hexavalent chromium Industrial RSL of 6.3 mg/kg, not the trivalent chromium Industrial RSL of 180,000 mg/kg.

## 8.5 Conclusions

The current Soil HHRA review found that most organic and inorganic constituents detected at the former Depot are present at levels that do not exceed current Industrial RSLs. Review of the screening risk estimates indicates the cumulative risks are within the acceptable risk range and HI values are less than or meet the acceptable limit of one in all FUs, except in FU-4 and FU-6 (residential scenario only). The primary contributor to the FU-4 risk estimates is dioxin, which will be evaluated in future activities at the MI (see below). In the UU/UE portion of FU-6, calculation of risk estimates using the Residential RSLs indicates exceedances of the acceptable limits primarily due to PCB Aroclor 1260, benzo(a)pyrene, dieldrin and arsenic. Therefore, with the exceptions noted below, it does not appear that a revised soils-only HHRA is

necessary in order to adequately assess potential incremental health risks and assure protectiveness of the remedy.

- Limited sampling was performed in the UU/UE portion of FU-6. A removal action was conducted in 1998 to excavate a total area of 103,000 square feet in the housing area with elevated dieldrin concentrations. Total chromium was detected in one sample location and the area will be sampled and analyzed for chromium speciation in future activities at the MI (see below). In addition, the 2000 MI RI indicates a potential for historic spills and PAH and pesticide contamination to be present in the non-UU/UE area of FU-6. Additional characterization of soil for other contaminants will be performed to address the uncertainty for risk in UU/UE area due to EPCs being calculated based on samples within and outside the UU/UE area, and the potential for PAH and pesticide contamination from historic spills outside the UU/UE area.
- All of the analytical results for lead in FU-2, FU-5 and FU-6 are less than the Industrial Soil RSL of 800 mg/kg. Certain analytical results in surface soil (0-2 ft) in FU-1, FU-3 and FU-4 are greater than 800 mg/kg: two results of 1,120 and 1,680 mg/kg exceed in FU-1, four results of 960, 2,230, 2,670 and 10,300 mg/kg exceed in FU-3 and three results of 878, 1,060 and 2,420 mg/kg exceed in FU-4. The location of the sample with a result of 10,300 mg/kg is near the excavation areas in FU-3, and it may have been excavated as part of the removal action. Additional sampling and analysis for lead will better characterize lead concentrations and identify areas requiring further remedial action to assure protectiveness in those FUs where lead has been detected above the RSL, i.e., FU 1, 3 & 4.
- Total chromium results exceed the hexavalent screening value (6.3 mg/kg) in numerous samples but do not exceed the value for trivalent chromium (180,000 mg/kg) at any samples. Total chromium concentrations are expected to consist mainly of trivalent chromium since it occurs naturally, while hexavalent chromium is most commonly produced by industrial processes; air emissions of chromium are also predominantly of trivalent chromium (USEPA, 2000). Speciation analysis should be considered to measure the actual ratio of trivalent to hexavalent chromium.
- Arsenic concentrations exceed their current industrial value in several locations. However, the concentrations are within the range of background concentrations identified for the site, state and eastern United States, as well as the range of cleanup levels used at Superfund sites across the country. Further investigation of arsenic in soil at the MI is not considered necessary.
- Screening levels for dioxins/furans were established after the MI RI was completed. The current status and continued enforcement of both the dioxin-related land use restrictions for the former Dip Vat area and the PCP-related restrictions in the 2005 MI NLUR are being reviewed in planning additional sampling and risk assessment of soils to assure protectiveness of the remedy. Other areas where dioxins/furans were detected but no LUCs were instituted (including shallow and deeper soils within a portion of FU3 and FU4, as well as other media) are also being reviewed to determine what additional work is needed to assure both human health and ecological risks are properly addressed. The

protocol provided in the *Tri-Service Environmental Risk Assessment Workgroup Questions/Answers on Dioxin* (TSERAWQ, 2013) is being used as guidance.

- These restricted areas are largely co-located, as PCP use is a likely source of the dioxins in soil. The MI LUCIP (CH2M HILL 2004b) references the MI NLUR; it does not mention the dioxin- or PCP-related land use restrictions.

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## 9 Review of 2000 SLERAs

### 9.1 Overview and SLERA Methodology

#### 9.1.1 Overview

HDR has conducted a review of the SLERAs for FU1 through FU6 in the 2000 MI RI to determine if the conclusions are still valid and whether the SLERAs should be updated.

The approach to the 2000 SLERAs included assessment of ecological impacts from surface soil, surface water, and/or sediments; this review includes assessment of the methodology used in the 2000 SLERAs and a comparison of analytical data for COPCs to current ecological screening levels.

The 2000 MI RI noted that there was minimal to no ecological habitat throughout the MI; these conditions have not changed since that time.

#### 9.1.2 SLERA Methodology

The 2000 SLERAs were conducted in accordance with the *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (USEPA 1997). The guidance includes eight general steps, of which Steps 1, 2, and 3 were performed in preparing the 2000 MI RI. These include:

1. Screening level problem formulation and toxicity evaluation;
2. Screening level exposure estimate and risk calculation; and
3. COPC refinement and problem formulation for baseline ERA (BERA)

The first two steps provide the means to complete a screening level, conservative assessment of which contaminants and exposure pathways require further evaluation and which do not. These steps use existing site data with minimal risk management input. Step 3a, COPC refinement, is performed to reevaluate the COPCs from Step 1 that were retained for further evaluation. COPCs retained based on very conservative exposure scenarios may be eliminated from further consideration, the remaining COPCs are carried forward to the BERA. Step 3b, problem formulation, focuses the scope and magnitude of the BERA.

The Step 1 screening level problem formulation, described in Section 7.8 of the 2000 MI RI, included development of a CSM for each FU to address the following:

- Environmental Setting and Contaminants at the Site: Identifies on- and off-site land uses, contaminants detected at the site, potential contaminant migration pathways, ecological habitats (e.g., wetlands, impoundments), observed or potentially occurring species, and identification of any protected species or critical habitats.
- Contaminant Fate and Transport: Identifies potential pathways for migration of site contaminants (e.g., surface water runoff). Detected contaminants in environmental

media are noted, as are the maximum detected concentrations to be used as ecological EPCs in the screening assessment;

- **Complete Exposure Pathways:** Evaluates potential ecological exposure pathways. For a pathway to be complete, a contaminant must travel from the source to an ecological receptor, via one or more exposure routes. It is noted in the RI that ecological habitats are minimal to nonexistent at the MI; a conservative approach was used so that potential ecological risks were not missed. More realistic exposure assumptions are considered in Step 3.
- **Assessment and Measurement Endpoints:** Develops assessment endpoints, expressions of the environmental values to be protected, based on the ecological exposure pathways considered potentially complete. The 2000 SLERAs included comparison of maximum EPCs to conservative screening level benchmarks.

The ecological CSMs for surface soil, surface water and sediment exposures were provided for each FU in [Figures 10-2, 14-2, 18-2, 22-2, 26-2 and 30-2](#) of the 2000 MI RI, respectively (Attachment G). The 2001 MI ROD provided a comprehensive CSM for human health and ecological exposure to groundwater and soil in [Figure 2-21](#) (Attachment G).

The Step 2 screening level risk estimate was performed using the HQ approach, with HQs being derived by dividing the EPCs by the screening ecotoxicity values. Using this approach, a HQ less than one indicates that the contaminant is unlikely to cause adverse effects; therefore these contaminants were not assessed further. Contaminants with an HQ greater than or equal to one are considered a potential ecological risk (with higher HQs indicating that the potential is increasing) and are carried forward to Step 3 of the BERA. Contaminants with no ecotoxicity screening criteria were also carried forward to assure all potential toxicity was considered.

Conservative thresholds for adverse ecological effects, i.e., screening ecotoxicity values, were used in the SLERAs. The sources for the ecotoxicity values used in the 2000 SLERAs are listed below. Also listed are the current criteria used by HDR for the SLERA review, taken from USEPA Region 4 *Ecological Risk Assessment Supplemental Guidance* (USEPA 2018b):

- **Soil**
  - o Draft Ecological Screening Levels for Soil from “Memorandum – Ecological Risk Assessment at Military Bases: Process Considerations, Timing of Activities, and Inclusion of Stakeholders” (USEPA 1998b); these values are presented in Table 7-14 of the 2000 MI RI.
  - o HDR’s current review of the surface soil data applies the USEPA Region 4 Soil Screening Values, updated in March 2018 (Table 3; USEPA 2018b).
- **Surface Water**
  - o Surface Water chronic values were taken from the USEPA Region 4 Supplemental Guidance to RAGS: Region 4 Bulletins, Freshwater Surface Water Screening Values for Hazardous Waste Sites (USEPA 1995b); these values are presented in Table 7-12 of the 2000 MI RI.



- o HDR's current review of the surface water data, documented below, applies the USEPA Region 4 Freshwater Chronic and Acute Screening Values, updated in March 2018 (Tables 1a and b; USEPA 2018b).
- Sediment
  - o Sediment screening values were taken from the USEPA Region 4 Supplemental Guidance to RAGS: Region 4 Bulletins, Sediment Screening Values for Hazardous Waste Sites (USEPA 1995c); these values are presented in Table 7-13 of the 2000 MI RI.
  - o HDR's current review of the sediment data, documented below, applies the USEPA Region 4 Freshwater Sediment Ecological Screening Values for Non-Narcotic and Narcotic Modes of Action, updated in March 2018 (Tables 2a and b; USEPA 2018b).

The maximum concentrations of all chemicals detected in surface water, sediment, or soil were used as the EPCs for estimating risk to fish, aquatic invertebrates and terrestrial organisms. Only potentially complete exposure pathways were addressed.

An assessment of the types and extent of uncertainty related to the risk evaluations was also performed. Professional judgment was used to assess the uncertainty associated with information taken from the literature, which was used in developing screening ecotoxicity values and other factors.

At the end of Step 2, a Scientific Management Decision Point (SMDP) was made about whether the information available is adequate to make a risk management decision. The three possible decisions at this point included:

- There is adequate information to conclude that ecological risks are negligible and thus there is no need for remediation on the basis of ecological risk;
- The information is not adequate to make a decision at this point, and the SLERA process will continue to Step 3 of the BERA; and
- The information indicates a potential for adverse ecological effects, and a BERA is warranted.

The Step 2 screening for each FU at the MI indicated there was adequate information and a potential for adverse ecological effects. The identified COPCs were carried forward through Step 3, the first step of the BERA.

Steps 3a and 3b refine the COPCs and problem formulation developed in the screening level assessment. The assumptions and site-specific information were reconsidered to refine the list of COPCs and to assess the scope and goals of a possible BERA. The revised assumptions and site-specific considerations used in the 2000 MI RI included:

- Use of arithmetic average contaminant concentrations, as well as maximum concentrations;
- Contaminant concentrations were compared to background;

- Frequency of detection was considered;
- Acute or lowest observed adverse effects level (LOAEL) ecotoxicity screening values were considered;
- Other literature sources of ecotoxicity screening values may be included where appropriate (e.g., if no ecotoxicity screening value was available in Step 2); and
- No state or federally listed or proposed endangered or threatened species were known to inhabit the area of FUs 1 through 6 (TDEC 1996; USFWS 1996).

The following additional considerations were used to calculate a range of HQs:

- Maximum versus chronic criteria/no observable adverse effects level (NOAEL);
- Maximum versus acute criteria/LOAEL;
- Average versus chronic criteria/NOAEL; and
- Average versus acute criteria/LOAEL.

The conservative ecological exposure pathways used in Step 2 were also reevaluated based on actual site conditions. If no constituents or exposure pathways of concern are identified as a result of the refinement process, a SMDP is developed indicating that ecological risks are negligible and there is no need for remediation on the basis of ecological risk. If issues remain following the refinement process, further evaluation should be completed.

The steps and assumptions from the 2000 MI RI described above are in accordance with applicable current guidance and serve as the basis for HDR's review.

## 9.2 SLERA Issues Considered in Current Review

### 9.2.1 Scientific Management Decision Points

The SMDPs in the 2000 MI RI were evaluated as to whether the conclusions reached at that time have changed and if so, the basis for that change. Note that there are not any new data for soil, sediment and surface water; therefore, the COPC concentrations used are the same for the 2000 SLERAs and the current review of potential ecological risks. Changes in ecotoxicity values and site conditions, particularly as they relate to the presence or absence of endangered species and/or suitable habitat and off-site transport of contaminants are also considered.

### 9.2.2 Endangered Species/Habitat

There were no state or federally listed or proposed endangered or threatened species known to inhabit the area of the site (TDEC 1996; USFWS 1996).

Review of current sources indicates there are 94 listed species believed to or known to occur in Tennessee (USFWS 2015). TDEC's Rare Species by County online database indicates that there are 32 rare species listed in Shelby County, Tennessee: two amphibians, nine birds, three fish, ten plants, one insect, two mammals, three mollusks and one reptile (TDEC 2016, 2017). The USFWS Environmental Conservation Online System for Shelby County indicates four listed

species are potentially present: bald eagle, least tern, Indiana bat and northern long-eared bat (USFWS 2015). No threatened or endangered species were identified at DDMT in the 2000 MI RI.

There are no on-site or near-site natural habitats that could support significant populations of terrestrial wildlife. The limited ecological habitat within the MI was considered to be highly disturbed and of poor quality in the RI and remains so today. Therefore, there are no complete ecological exposure pathways at DDMT.

### 9.2.3 Off-site Surface Water Transport

The potential impact to local watersheds was assessed in order to evaluate the potential for ecological impacts from the conveyance of runoff off-site. The surface drainage from each of the FUs is shown on [Figure G-1](#) in Attachment G.

HDR reviewed the Nonconnah Creek Watershed [Hydrologic Unit Code (HUC) 08010211] of the Mississippi River Basin Water Quality Management Plan (TDEC, 2002).

The water quality assessment for rivers and streams in the Nonconnah Creek Watershed indicates that while some portions of the watershed partially support its designated use, larger portions do not. The designated use includes the support of fish and aquatic life and the attainment of applicable ambient surface water quality standards. Streams in the watershed are impaired due to enrichment by organic matter and low dissolved oxygen levels, pathogens and other factors. Approximately 15 percent of the watershed is either forested or wetlands; residential development and agriculture are the dominant land uses.

There are seven documented Rare Plant and Animal Species and one rare snail species in the Nonconnah Creek Watershed listed in the management plan. The watershed is not considered as a significant resource based on its natural and scenic qualities or its value as a fishery. Based on the findings of the watershed assessment indicating a low resource value, any runoff from the MI is unlikely to have a significant impact on the ability of local surface water bodies to support wildlife and aquatic-dependent species or habitat. The potential transport of dioxin/furans warrants additional study in accordance with the Tri-Service *Environmental Risk Assessment Workgroup Questions/Answers on Dioxin* (TSERAWQ, 2013), as discussed in Sections 8.2.2.4 and 8.5.

## 9.3 SLERA Conclusions and Review of Current Conditions by FU

The following sections briefly summarize the SLERA and the finding of this review for each FU, including site description, media sampled, COPCs identified, SLERA conclusions, changes in site conditions since 2000, comparison of analytical results to current criteria, and the review conclusions.

### 9.3.1 FU1

#### 9.3.1.1 SLERA Summary

FU1 is fully developed with closely spaced warehouses. The landscaped strips between warehouses and roads/parking areas provide little ecological habitat for plants or animals. There are no on-site ponds, ditches or wetlands. Wildlife may include human-tolerant birds (e.g., sparrows, rock doves, grackles, mockingbirds) and small mammals (e.g., mice). This FU is expected to remain a light industrial area in the future.

Stormwater runoff generated within FU1 is conveyed via underground pipes to Lake Danielson or into a ditch below the lake's dam that drains to an unnamed tributary and Nonconnah Creek. Runoff in other portions of FU1 drains to Tarrant Branch, which also empties into Nonconnah Creek.

Only soil samples were collected in FU 1. Based on the Weight of Evidence presented in Table 10-10 of the 2000 MI RI, a few inorganic and several organic COPCs detected in soil have potential for adverse effects. These included selenium, dieldrin, TCE, Aroclor-1260 and several PAHs, for which HQs were at or above 1.0, and/or detected above background levels. Surface soil criteria for eight contaminants were not available for comparison, so HQs could not be determined; however, four (carbazole, carbon disulfide, methyl ethyl ketone and xylenes) were compared to available background concentrations. Those without criteria or background values (2-hexanone, acetone, bromomethane and petroleum hydrocarbons) were carried through as COPCs, as required by guidance.

The key consideration in the 2000 SLERA for FU1 was the lack of habitat and therefore, no complete ecological exposure pathways were identified.

#### 9.3.1.2 Current Review Conclusions

A comparison of the RI surface soil data within FU1 to current USEPA Region 4 ecological screening criteria, updated in March 2018, indicates the same constituents as identified in 2000 exceed their respective criterion, with the exception of TCE. Several PAHs (including benzo (a)pyrene); inorganics (e.g., arsenic, chromium, manganese, lead); and pesticides (e.g., DDT) also exceed criteria, as shown on [Table 1](#) in Attachment G.

Although several COPCs were identified as exceeding ecological criteria, the lack of complete ecological exposure pathways and the limited resource value of off-site water bodies that may receive runoff, site conditions indicate that current and future ecological impacts are negligible.

HDR's review of the 2018 ecotoxicity criteria, detected COPC concentrations and site conditions supports the general conclusions in the 2000 MI RI. Further review of FU1 soil analytical results is being performed to evaluate the potential for COPCs to be conveyed off-site via stormwater runoff. The review will be included in a QAPP being prepared for additional sampling and risk assessment, as discussed in [Section 9.4](#).

## 9.3.2 FU2

### 9.3.2.1 SLERA Summary

FU2 contains a golf course, several copses of mature trees and grassed areas; most of FU2 is grass covered, not paved. There is little ecological habitat for plants or animals due to regular maintenance of the golf course. Soil, sediment and surface water data were collected during the RI.

There are two surface water bodies, Golf Course Pond and Lake Danielson in FU2. Most runoff flows to a concrete-lined ditch below Lake Danielson or to the ditch below the Golf Course Pond. Both drain to unnamed tributaries of Nonconnah Creek.

Several sediment COPCs remained after Step 3 was completed in the 2000 MI RI (Table 14-17); the potential for adverse effects on the benthic community was determined to be minimal based on the low HQs. Bioaccumulation within the aquatic food chain was identified as potentially occurring in these ponds. In a separate study (Radian 1999) referenced in the RI, the ingestion of pesticides (detected in fish and amphibians) by piscivorous birds was determined unlikely to result in adverse effects. Therefore, the potential for adverse effects from sediment COPCs was considered negligible.

Refinement of surface soil and surface water COPCs (Tables 14-15 and 14-16 of the 2000 MI RI) indicated that, based on the weight of evidence and poor quality habitat, current and future ecological effects were negligible. No further assessment of ecological risk at FU2 was deemed to be warranted.

### 9.3.2.2 Current Review Conclusions

Comparison of the soil data against the current USEPA Region 4 ecological screening criteria, updated in March 2018, indicates exceedances in soil within FU2. PCE, bis(2-ethylhexyl)phthalate (BEHP), carbazole, fluoranthene, several pesticides (e.g., DDT) and inorganics (e.g., lead, manganese, zinc, arsenic and chromium) exceed current criteria as shown on [Table 1](#) in Attachment G.

No new sediment data have been collected and there are no numerical state sediment criteria; therefore, the existing data were compared to current USEPA Region 4 freshwater sediment ecological screening values for this review. That comparison indicates that for FU2, carbon tetrachloride, PAHs (including benzo(a)pyrene), pesticides (e.g., DDT), several types of furans and dioxins and inorganics (e.g., arsenic, barium, chromium, lead and zinc), were identified as being present at levels exceeding 2017 sediment criteria. Note that fewer constituents had screening levels available for comparison to detected concentrations at the time of the 2000 MI RI. These include several volatile organics, PAHs, furans and dioxins. The results of the current comparison are detailed in [Table 2](#) in Attachment G.

No new surface water data were collected; therefore, previously collected data from FU2 are compared to current USEPA Region 4 freshwater acute and chronic ecological screening

values. This comparison indicates that DDT, dieldrin, aluminum, copper, lead, selenium and zinc exceed their respective freshwater screening values as shown on [Table 3](#) in Attachment G.

HDR's review of the 2018 ecotoxicity criteria, detected COPC concentrations and site conditions (including the status of the Nonconnah Creek watershed as an ecological resource) support the general conclusions in the 2000 MI RI. Further review of FU2 soil, sediment and surface water analytical results is being performed to evaluate the potential for COPCs to be conveyed off-site via stormwater runoff. The review will be included in a QAPP being prepared for additional sampling and risk assessment, as discussed in [Section 9.4](#).

### 9.3.3 FU3

#### 9.3.3.1 SLERA Summary

FU3 contains two, long one-story buildings (970 and 972) and several smaller buildings surrounded by gravel and/or asphalt used for storage and equipment assembly. The majority of FU3 is owned by Barnhart Crane and Rigging and is used for their operations. A mowed utility corridor is present along the western boundary and a large undeveloped field is located in the eastern half of FU3. There is no suitable habitat for ecological receptors within this FU.

The 2000 MI RI describes stormwater in FU3 as being routed to underground pipes that lead to Tarrant Branch and eventually to Nonconnah Creek. No sediment or surface water samples were collected in this FU.

Several COPCs were identified in Step 3 of the 2000 MI RI (Table 18-14) as potentially causing adverse ecological effects; however, the lack of complete ecological exposure pathways at FU3 indicated that current and future ecological effects were negligible. No further assessment of ecological risks at FU3 was deemed to be warranted.

#### 9.3.3.2 Current Review Conclusions

A comparison of the concentrations of contaminants in surface soil to the current USEPA Region 4 ecological criteria, updated in March 2018, indicates that several PAHs (e.g., benzo(a)pyrene, chrysene), pesticides, dioxins/furans and inorganics (e.g., arsenic, barium, chromium and lead) exceed their respective criterion in soil.

Although several COPCs were identified as exceeding ecological criteria, the lack of complete ecological exposure pathways and the limited resource value of off-site water bodies that may receive stormwater runoff indicate that current and future ecological impacts are negligible. HDR's review of the 2018 ecotoxicity criteria, detected COPC concentrations and site conditions supports the general conclusion in the 2000 MI RI. Further review of FU3 soil analytical results is being performed to evaluate the potential for COPCs to be conveyed off-site via stormwater runoff. The review will be included in a QAPP being prepared for additional sampling and risk assessment, as discussed in [Section 9.4](#).

### 9.3.4 FU4

#### 9.3.4.1 SLERA Summary

FU4 includes the northwest quadrant of the MI and a large, undeveloped section along the northern boundary of the MI. The northwest quadrant contains three large one-story buildings (835, 925 and 949) and a few smaller buildings surrounded by gravel and/or asphalt used for storage and equipment assembly; the majority of this area is owned by Barnhart Crane and Rigging and is used for their operations. A mowed utility corridor is also present along the western boundary as in FU3. The section along the northern boundary is largely grassed and has a stormwater detention basin in the eastern section; there is one large building (210) and an adjacent parking area in the northeast corner of the MI. There is no suitable habitat for ecological receptors within this FU.

The 2000 MI RI notes that stormwater runoff from FU4 flows to either concrete-lined ditches or underground drainage pipes that lead to Cane Creek, which eventually flows to Nonconnah Creek.

Several COPCs were identified as exceeding ecological criteria in surface soil and sediment in the 2000 MI RI Step 3 (Tables 22-16 and 22-18). However, none of the COPCs identified in surface water (Table 22-17 of 2000 MI RI) indicated adverse ecological effects. The 2000 SLERA for FU4 noted that the lack of complete ecological exposure pathways at FU4 indicates that current and future ecological effects are negligible. No further assessment of ecological risk associated with contaminants at FU4 was deemed to be warranted.

#### 9.3.4.2 Current Review Conclusions

HDR's review of current USEPA Region 4 ecotoxicity criteria, updated in March 2018, and detected COPC concentrations in soil within FU4 indicates bromomethane, several PAHs (e.g., benzo(a)pyrene), pesticides (e.g., dieldrin), Aroclor 1260, dioxins/furans and inorganics (e.g., arsenic, total chromium) exceed their respective criterion as shown in [Table 1](#) of Attachment G.

Comparing the earlier sediment analytical results for FU4 to current USEPA Region 4 screening values indicates carbon tetrachloride, methylene chloride, 2 methyl-naphthalene, several PAHs (e.g., benzo(a)pyrene), DDT and other pesticides, certain dioxins/furans and several inorganics (e.g., arsenic, barium, chromium, lead, zinc) exceed their respective screening values, as shown in [Table 2](#) in Attachment G.

Comparison of maximum detected concentrations in surface water from previous sampling against current USEPA Region 4 screening values indicates that BEHP, dieldrin, DDT, dioxins/furans and inorganics (i.e., aluminum, copper, iron, lead and silver) exceed freshwater screening values as shown in [Table 3](#) in Attachment G; there were no dioxin screening values available at the time of the original analysis.

Although several COPCs in soil, sediment and surface water were identified as exceeding current ecological criteria, the lack of complete ecological exposure pathways and the limited resource value of off-site water bodies that may receive stormwater runoff indicate that current



and future ecological impacts are negligible, supporting the general conclusion in the 2000 MI RI. Further review of FU4 soil, sediment and surface water analytical results is being performed to evaluate the potential for COPCs to be conveyed off-site via stormwater runoff. The review will be included in a QAPP being prepared for additional sampling and risk assessment, as discussed in [Section 9.4](#).

### 9.3.5 FU5

#### 9.3.5.1 SLERA Summary

FU5 contains the newer warehouses in the south-central MI. The buildings are surrounded by paved streets and parking with grassed strips and some landscaped areas.

Several soil COPCs (Table 26-11 of 2000 MI RI) were identified as potentially causing adverse ecological effects. Due to the lack of complete ecological exposure pathways at FU5, the 2000 SLERA concluded that current and future ecological impacts were negligible; no further assessment was deemed to be warranted.

The 2000 MI RI notes that stormwater runoff from FU5 is transported via underground pipes to an unnamed tributary or to Tarrant Branch that eventually discharge to Nonconnah Creek.

#### 9.3.5.2 Current Review Conclusions

A review of current USEPA Region 4 ecotoxicity criteria, updated in March 2018, against surface soil data indicates that several PAHs (e.g., benzo(a)pyrene), pesticides, dibenzofuran and inorganics exceed their respective criterion ([Table 1](#) in Attachment G).

Although several COPCs in soil were identified as exceeding current ecological criteria, the lack of complete ecological exposure pathways and the limited resource value of off-site water bodies that may receive stormwater runoff indicate that current and future ecological impacts are negligible, supporting the general conclusion in the 2000 MI RI. Further review of FU5 soil analytical results is being performed to evaluate the potential for COPCs to be conveyed off-site via stormwater runoff. The review will be included in a QAPP being prepared for additional sampling and risk assessment, as discussed in [Section 9.4](#).

### 9.3.6 FU6

#### 9.3.6.1 SLERA Summary

FU6 contains the main administrative building (now used by Barnhart Crane), the new police precinct buildings, small office and maintenance buildings, and residential buildings in the southeastern strip. There are large paved parking areas adjacent to the buildings with small grassed areas and a few plantings. The residential area is grassed and has large trees. Stormwater runoff generated within this FU ultimately flows off-site to an unnamed tributary of Nonconnah Creek.

Several soil COPCs were identified in Step 3 (Table 30-13 of 2000 MI RI) as potentially causing adverse ecological effects. The lack of complete ecological exposure pathways in this area



indicated that ecological effects were negligible and no further assessment of ecological risk was recommended.

#### 9.3.6.2 Current Review Conclusions

HDR's review of contaminant concentrations in surface soil compared to current USEPA Region 4 criteria, updated in March 2018, indicates the maximum concentrations of bromomethane, several PAHs (e.g., benzo(a)pyrene), Aroclor 1260, pesticides and several inorganics (e.g., arsenic, lead, manganese) exceed criteria as shown on [Table 1](#) in Attachment G.

Although several COPCs in soil were identified as exceeding current ecological criteria, the lack of complete ecological exposure pathways and the limited resource value of off-site water bodies that may receive stormwater runoff indicate that current and future ecological impacts are negligible, supporting the general conclusion in the 2000 MI RI. Further review of FU6 soil analytical results is being performed to evaluate the potential for COPCs to be conveyed off-site via stormwater runoff. The review will be included in a QAPP being prepared for additional sampling and risk assessment, as discussed in [Section 9.4](#).

#### 9.3.7 Dioxins/Furans

As noted in [Section 8.2.2](#), neither human health nor ecological soil screening levels for dioxins/furans were available for the 2000 MI RI. As part of the SLERA review, the maximum detected dioxin and furan congener-specific concentrations and the calculated TCDD equivalent surface soil concentrations ([Table 4a](#) in Attachment G) were compared to current USEPA ecological soil screening levels. The data indicates exceedances for dibenzofuran in FU1, FU3, FU4 and FU5; and several dioxin/furan congeners in FU3 and FU4, described in further detail below.

Background values for dioxin and furan concentrations ([Table 3-10](#) in Attachment F) are less than the maximum detected concentrations in FU2 and FU4 for surface soil, sediment and surface water (Attachment G, [Tables 4a to 4c](#)). The background values for TCDD equivalents are 0.010 µg/kg in surface soil, 0.009 µg/kg in sediment and 0.018 ng/L in surface water.

The soil background dioxin and furan concentrations in FU3 are similar to maximum detected concentrations on a congener-specific basis. For example, the octachlorodibenzo-p-dioxin background concentration is 9.72 µg/kg compared to the maximum concentration of 10.25 µg/kg. In FU4, the TCDD Equivalent maximum detected concentrations of 0.083 µg/kg in surface soil, 0.129 µg/kg in sediment and 0.028 ng/L in surface water all exceed background values.

Dioxin/furan concentrations in sediment samples from FU2 and FU4 have numerous screening level exceedances, as shown on [Table 4b](#) in Attachment G. For example, the TCDD equivalent maximum detected concentrations are two orders of magnitude higher than the ecological screening value. The surface water TCDD equivalent maximum detected concentration is significantly higher than the chronic EPA Region 4 ecological freshwater screening value, as shown on [Table 4c](#) in Attachment G.

As noted in [Section 8.2.2.4](#), the *Tri-Service Environmental Risk Assessment Workgroup Questions/Answers on Dioxin* (TSERAWQ, 2013) recommends environmental investigations focus on the potential for direct-contact pathways for both human and ecological receptors. In addition, remediation of these contaminants should address both human health and ecological risks. Ecological impacts will be considered in determining whether further evaluation should be performed to assure protectiveness of the remedy for DDMT and soil, sediment and surface water will be included in that evaluation,.

## 9.4 Conclusions

As noted above, the SLERAs completed in 2000 included an evaluation of ecological impacts from surface soil, surface water, and/or sediments. This review is based solely on a comparison of historic data to current ecological screening levels, updated in March 2018. The current review indicates that the levels of certain COCs in environmental media exceed their respective screening levels.

In 2000, it was noted that there is minimal to no suitable ecological habitat throughout the MI; these conditions have not changed and there are no apparent complete ecological pathways of exposure on-site. Therefore, on-site ecological risk is considered minimal.

Comparison of soil data from the MI RI to current USEPA Region 4 soil ecological screening values (USEPA 2018b) indicates that certain contaminants, including bromomethane, PCE, several PAHs (e.g., benzo(a)pyrene), pesticides (e.g., DDT, dieldrin), Aroclor 1260, dioxins/furans and inorganics were present at levels exceeding soil criteria, as shown on [Table 1](#) in Attachment G.

Comparison of sediment data from the MI RI to current USEPA Region 4 freshwater sediment ecological screening values (USEPA 2018b) indicates that contaminants, including carbon tetrachloride, methylene chloride, PAHs, pesticides, dioxins/furans and metals were present at levels exceeding sediment criteria, as shown on [Table 2](#) in Attachment G.

Surface water data from the MI RI were compared to current USEPA Region 4 freshwater acute and chronic ecological screening values (USEPA 2018b). Dieldrin, DDT, dioxins/furans, aluminum, copper, iron, lead, silver and zinc exceed their screening values, as shown on [Table 3](#) in Attachment G.

HDR's review of ecotoxicity criteria, detected COPC concentrations and site conditions (including the status of the Nonconnah Creek watershed as having limited ecological resource value) largely supports the conclusion in the 2000 MI RI that there is negligible ecological risk from stormwater runoff or other potential ecological exposure pathways emanating from DDMT.

Because there is potential for COPCs to be conveyed off-site via stormwater runoff, the detection of dioxin/furans in on-site soil, as well as in surface water and sediment in local streams warrants additional study in accordance with the *Tri-Service Environmental Risk Assessment Workgroup Questions/Answers on Dioxin* (TSERAWQ, 2013). The results of this study, including review of the existing analytical results from FU1 to FU6, will be included in a QAPP being prepared for additional sampling and risk assessment.

## 10 HHERA Conclusions and Recommendations

### 10.1 Groundwater HHRA Update

The results of the Groundwater HHRA update indicate that there is potential for receptors to experience adverse health effects from exposure to contaminated on-site groundwater.

These are currently being prevented by the existing land use restrictions at the MI, which are:

- No residential land use or other child-occupied facilities, including daycare on the MI; and
- No production/consumptive use of groundwater or drilling groundwater wells (does not apply to wells installed as part of the CERCLA action) on the MI.

As long as these restrictions are maintained, the exposure pathways related to the contaminated groundwater are not complete, with the possible exception of vapor intrusion. A work plan has been prepared for soil gas sampling, which is to be performed to better estimate human health risk via vapor intrusion. Sampling will be conducted in 2018.

### 10.2 Soil HHRA Review

The current Soil HHRA review found that most organic and inorganic constituents detected at the former Depot are present at levels that do not exceed current Industrial RSLs. Therefore, with certain exceptions, it does not appear that a revised soils-only HHRA is necessary in order to adequately assess potential incremental health risks and assure protectiveness of the remedy.

Additional risk assessment required to assure protectiveness of the remedy:

- The Soil HHRA review determined that additional soil sampling may be necessary on the MI.
- Additional sampling for chromium speciation analysis to evaluate the potential risks based on detection of total chromium at DDMT, as hexavalent chromium is much more toxic than the trivalent form.
- Review the current status and continued enforcement of both the dioxin-related land use restrictions for the former Dip Vat area and the PCP-related restrictions in the 2005 MI NLUR to evaluate the need for further sampling and risk assessment. The institutional controls, as enforced, in conjunction with the results of the HHRA and SLERA review should be considered in determining the need for remedial action in these areas.

### 10.3 SLERA Review

The findings of the current SLERA review indicate that concentrations of certain COCs in environmental media exceed their respective ecological screening levels. In 2000, it was noted

that there is minimal to no suitable ecological habitat throughout the MI; these conditions have not changed and there are no apparent complete ecological pathways of exposure on-site. Therefore, on-site ecological risk is considered minimal.

As noted, the detection of dioxin/furans in on-site soils, as well as in local surface water and sediment warrants additional study. The protocol for risk assessment provided in the *Tri-Service Environmental Risk Assessment Workgroup Questions/Answers on Dioxin* (TSERAWQ, 2013) will be used as guidance for further evaluation of ecological risk to determine protectiveness of the remedy in areas where detected concentrations of dioxin/furan contaminants exceed screening values and may or may not have impacted sediment and surface water.

## 10.4 Detection Limits for Additional Sampling

Based on the additional sampling recommended above and for the vapor intrusion study, proposed laboratory detection limits were compared to the screening levels applied in the risk assessments to check whether or not constituents can be detected at or below the screening levels. Current laboratory methods may be unable to achieve these risk-based screening levels.

Groundwater detection limits were compiled from the April 2017 LTM Summary Report (HDR 2017b) and the 2011 QAPP (HDR 2011) and the DDMT QAPP (HDR 2018) and presented in [Table 10-1](#). If more than one detection limit was identified, the lowest value was chosen. Comparison of the detection limits to the HHRA screening levels indicates all of the detection limits are less than the USEPA MCL (2017, 2019b) while approximately half of the COPCs have detection limits that are greater than the USEPA Tapwater RSLs (2019b).

**Table 10-1 Detection Limits for HHRA Groundwater COPCs**

| COPC                      | Method Detection Limit | Reporting Limit | HHRA Screening Levels |                           |           |
|---------------------------|------------------------|-----------------|-----------------------|---------------------------|-----------|
|                           |                        |                 | MCL                   | RSL Tapwater (1E-06, 0.1) | RSL Basis |
| 1,1,2,2-Tetrachloroethane | 0.2                    | 0.5             | NC                    | 0.076                     | c         |
| 1,1-Dichloroethene        | 0.5                    | 1               | 7                     | 28                        | n         |
| 1,2,3-Trichloropropane    | 0.5                    | 1               | NC                    | 0.00075                   | c*        |
| 1,2,4-Trimethylbenzene    | 0.25                   | 1               | NC                    | 5.6                       | n         |
| 1,2-Dichloroethane        | 0.25                   | 0.5             | 5                     | 0.17                      | c**       |
| 1,2-Dichloropropane       | 0.2                    | 1               | 5                     | 0.82                      | n         |
| Acetone                   | 2.5                    | 10              | NC                    | 1400                      | n         |
| Carbon tetrachloride      | 0.25                   | 1               | 5                     | 0.46                      | c*        |
| Chloroform                | 0.125                  | 0.3             | 80                    | 0.22                      | c*        |
| cis-1,2-Dichloroethylene  | 0.25                   | 1               | 70                    | 3.6                       | n         |
| Methyl Ethyl Ketone       | 2.5                    | 10              | NC                    | 560                       | n         |
| Methyl tert-butyl ether   | 0.5                    | 5               | NC                    | 14                        | c*        |

| COPC               | Method Detection Limit | Reporting Limit | HHRA Screening Levels |                           |           |
|--------------------|------------------------|-----------------|-----------------------|---------------------------|-----------|
|                    |                        |                 | MCL                   | RSL Tapwater (1E-06, 0.1) | RSL Basis |
| Methylene chloride | 0.25                   | 1               | 5                     | 11                        | n         |
| Tetrachloroethene  | 0.25                   | 1               | 5                     | 4.1                       | n         |
| Toluene            | 0.25                   | 1               | 1000                  | 110                       | n         |
| Trichloroethylene  | 0.25                   | <b>1</b>        | 5                     | 0.28                      | n         |
| Vinyl chloride     | <b>0.25</b>            | <b>1</b>        | 2                     | 0.019                     | c         |

**Notes:** All values are presented in units of µg/L. Exceedances of screening levels are **bolded**.  
**Abbreviations:** NC = no criterion; \* = non-cancer RSL < 100 times cancer RSL; \*\* = non-cancer RSL < 10 times cancer RSL; c = cancer; n = non-cancer

Soil detection limits for chromium, lead and TCDD were obtained from Microbac Laboratories. See [Table 10-2](#).

**Table 10-2 Detection Limits for Soil COPCs**

| Analyte                   | Method Detection Limit | Reporting Limit | HHRA/SLERA Screening Levels                    |                                  |           |
|---------------------------|------------------------|-----------------|------------------------------------------------|----------------------------------|-----------|
|                           |                        |                 | USEPA Region 4 Ecological Soil Screening Level | RSL Industrial Soil (1E-06, 0.1) | RSL Basis |
| Chromium, Total           | 0.5                    | 1               | 23                                             | NC                               |           |
| Chromium, Trivalent (3+)  | 0.05                   | 1               | 26                                             | 180000                           | nm        |
| Chromium, Hexavalent (6+) | 1                      | 2               | 0.34                                           | 6.3                              | c*        |
| Lead                      | 2.5                    | 5               | 11                                             | 800                              | L         |
| TCDD (TEQ)                | 5.3E-06                | 3.3E-06         | 3.15E-06                                       | 2.2E-05                          | c**       |

**Notes:** All values are presented in units of mg/kg. Exceedances of screening levels are **bolded**.  
**Abbreviations:** NC = no criterion; \* = non-cancer RSL < 100 times cancer RSL; \*\* = non-cancer RSL < 10 times cancer RSL; c = cancer; n = non-cancer; m = concentration may exceed ceiling limit, see RSL User's Guide; L = see RSL User's Guide on lead

Soil gas detection limits for were compiled in the October 2017 MI VI Soil Gas Sampling QAPP and are presented in [Table 10-3](#). None of the detection limits are greater than the current default EPA Soil Gas VISLs for a Commercial scenario (USEPA 2018d).

**Table 10-3 Detection Limits for Soil Gas COPCs**

| Analyte                                                                                                                                                                                                                                  | Method Detection Limit | Reporting Limit | HHRA Screening Levels                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|---------------------------------------|
|                                                                                                                                                                                                                                          |                        |                 | VISL Commercial Soil Gas (1E-06, 0.1) |
| cis 1,2-Dichloroethene                                                                                                                                                                                                                   | 0.07                   | 1.98            | NC                                    |
| Carbon Tetrachloride                                                                                                                                                                                                                     | 0.10                   | 0.19            | 68.1                                  |
| Chloroform                                                                                                                                                                                                                               | 0.08                   | 2.43            | 17.8                                  |
| Tetrachloroethene                                                                                                                                                                                                                        | 0.12                   | 0.20            | 584                                   |
| Trichloroethene                                                                                                                                                                                                                          | 0.09                   | 0.16            | 29.2                                  |
| Vinyl Chloride                                                                                                                                                                                                                           | 0.04                   | 0.08            | 92.9                                  |
| <b>Notes:</b> All values are presented in units of ug/m <sup>3</sup> . Screening levels were calculated using default parameters.<br>None of the detection limits exceed the screening levels<br><b>Abbreviations:</b> NC = no criterion |                        |                 |                                       |

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Tables



**TABLES TABLE OF CONTENTS:**

**Table 3-1          Monitoring and Injection Wells Used in the Assessment**

**Table 3-2          Groundwater Samples Used in the Assessment**

Table 3-1  
Monitoring and Injection Wells Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well      | Aquifer | Well     | Aquifer | Well       |
|---------|-----------|---------|----------|---------|------------|
| Fluvial | DR1-1     | Fluvial | MW-63A   | Fluvial | PMW21-02   |
| Fluvial | DR1-1A    | Fluvial | MW-63B   | Fluvial | PMW21-03   |
| Fluvial | DR1-2     | Fluvial | MW-64    | Fluvial | PMW21-04   |
| Fluvial | DR1-3     | Fluvial | MW-85    | Fluvial | PMW21-05   |
| Fluvial | DR1-4     | Fluvial | MW-88    | Fluvial | PMW85-01   |
| Fluvial | DR1-5     | Fluvial | MW-92    | Fluvial | PMW85-05   |
| Fluvial | DR1-5A    | Fluvial | MW-94A   | Fluvial | PMW92-02   |
| Fluvial | DR1-6     | Fluvial | MW-96    | Fluvial | PMW92-03   |
| Fluvial | DR1-6A    | Fluvial | MW-97    | Fluvial | PMW92-06   |
| Fluvial | DR1-7     | Fluvial | MW-98    | Fluvial | PMW101-02A |
| Fluvial | DR1-8     | Fluvial | MW-100B  | Fluvial | PMW101-02B |
| Fluvial | DR2-1     | Fluvial | MW-101B  | Fluvial | PMW101-03A |
| Fluvial | DR2-2     | Fluvial | MW-101T  | Fluvial | PMW101-03B |
| Fluvial | DR2-3     | Fluvial | MW-103   | Fluvial | PMW101-04A |
| Fluvial | DR2-4     | Fluvial | MW-104   | Fluvial | PMW101-04B |
| Fluvial | DR2-5     | Fluvial | MW-113   | Fluvial | PMW101-06A |
| Fluvial | DR2-6     | Fluvial | MW-142   | Fluvial | PMW101-06B |
| Fluvial | IW21-01A  | Fluvial | MW-143   | Fluvial | PMW101-07A |
| Fluvial | IW21-01B  | Fluvial | MW-197B  | Fluvial | PMW101-07B |
| Fluvial | IW21-02A  | Fluvial | MW-198   | I/UC    | MW-38      |
| Fluvial | IW21-02B  | Fluvial | MW-199B  | I/UC    | MW-39A     |
| Fluvial | IW21-03A  | Fluvial | MW-200   | I/UC    | MW-89      |
| Fluvial | IW21-03B  | Fluvial | MW-203B  | I/UC    | MW-90      |
| Fluvial | IW21-04A  | Fluvial | MW-204A  | I/UC    | MW-107B    |
| Fluvial | IW21-04B  | Fluvial | MW-204B  | I/UC    | MW-107T    |
| Fluvial | IW85-05   | Fluvial | MW-205B  | I/UC    | MW-108     |
| Fluvial | IW85-06   | Fluvial | MW-206A  | I/UC    | MW-141     |
| Fluvial | IW92-01   | Fluvial | MW-206B  | I/UC    | MW-197A    |
| Fluvial | IW92-02   | Fluvial | MW-207B  | I/UC    | MW-199A    |
| Fluvial | IW92-03   | Fluvial | MW-208B  | I/UC    | MW-202A    |
| Fluvial | IW92-07   | Fluvial | MW-209B  | I/UC    | MW-202B    |
| Fluvial | IW92-08   | Fluvial | MW-210B  | I/UC    | MW-203A    |
| Fluvial | IW101-02A | Fluvial | MW-212   | I/UC    | MW-205A    |
| Fluvial | IW101-02B | Fluvial | MW-213   | I/UC    | MW-207A    |
| Fluvial | IW101-02C | Fluvial | MW-215B  | I/UC    | MW-208A    |
| Fluvial | IW101-03A | Fluvial | MW-216   | I/UC    | MW-209A    |
| Fluvial | IW101-03B | Fluvial | MW-217   | I/UC    | MW-210A    |
| Fluvial | IW101-03C | Fluvial | MW-218   | I/UC    | MW-211     |
| Fluvial | IW101-04A | Fluvial | MW-219   | I/UC    | MW-214A    |
| Fluvial | IW101-04B | Fluvial | MW-257   | I/UC    | MW-214B    |
| Fluvial | IW101-04C | Fluvial | MW-258   | I/UC    | MW-215A    |
| Fluvial | IW101-05A | Fluvial | MW-259   | I/UC    | MW-252     |
| Fluvial | IW101-05B | Fluvial | MW-260   | I/UC    | MW-253     |
| Fluvial | IW101-05C | Fluvial | MW-261   | I/UC    | MW-256     |
| Fluvial | IW101-07A | Fluvial | MW-263   | I/UC    | MW-262     |
| Fluvial | IW101-07B | Fluvial | MW-265   | I/UC    | MW-264     |
| Fluvial | IW101-07C | Fluvial | MW-266   | I/UC    | MW-268     |
| Fluvial | MW-21     | Fluvial | MW-267   | I/UC    | MW-273     |
| Fluvial | MW-22     | Fluvial | MW-269   | Memphis | MW-140     |
| Fluvial | MW-25A    | Fluvial | MW-270   | Memphis | MW-254     |
| Fluvial | MW-26     | Fluvial | MW-271   | Memphis | MW-255     |
| Fluvial | MW-39     | Fluvial | MW-279   |         |            |
| Fluvial | MW-50     | Fluvial | MW-280   |         |            |
| Fluvial | MW-52     | Fluvial | MW-281   |         |            |
| Fluvial | MW-62     | Fluvial | PMW21-01 |         |            |

**Abbreviation:**

I/UC -- Intermediate / Upper Claiborne aquifer



Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well   | Unique Sample ID for Risk Assessment | Sample Date |
|---------|--------|--------------------------------------|-------------|
| Fluvial | DR1-1  | DR1-1_DR1-1-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR1-1  | DR1-1_DR1-1-LA-22_20151007           | 10/7/2015   |
| Fluvial | DR1-1  | DR1-1_DR1-1-LB-16_20121019           | 10/19/2012  |
| Fluvial | DR1-1  | DR1-1_DR1-1-LB-20_20141018           | 10/18/2014  |
| Fluvial | DR1-1  | DR1-1_DR1-1-LB-24_20161013           | 10/13/2016  |
| Fluvial | DR1-1A | DR1-1A_DR1-1A-LA-18_20131012         | 10/12/2013  |
| Fluvial | DR1-1A | DR1-1A_DR1-1A-LA-22_20151007         | 10/7/2015   |
| Fluvial | DR1-1A | DR1-1A_DR1-1A-LB-16_20121019         | 10/19/2012  |
| Fluvial | DR1-1A | DR1-1A_DR1-1A-LB-20_20141018         | 10/18/2014  |
| Fluvial | DR1-1A | DR1-1A_DR1-1A-LB-24_20161013         | 10/13/2016  |
| Fluvial | DR1-2  | DR1-2_DR1-2-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR1-2  | DR1-2_DR1-2-LA-22_20151007           | 10/7/2015   |
| Fluvial | DR1-2  | DR1-2_DR1-2-LB-16_20121019           | 10/19/2012  |
| Fluvial | DR1-2  | DR1-2_DR1-2-LB-20_20141018           | 10/18/2014  |
| Fluvial | DR1-2  | DR1-2_DR1-2-LB-24_20161014           | 10/14/2016  |
| Fluvial | DR1-3  | DR1-3_DR1-3-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR1-3  | DR1-3_DR1-3-LA-22_20151007           | 10/7/2015   |
| Fluvial | DR1-3  | DR1-3_DR1-3-LB-16_20121019           | 10/19/2012  |
| Fluvial | DR1-3  | DR1-3_DR1-3-LB-20_20141019           | 10/19/2014  |
| Fluvial | DR1-3  | DR1-3_DR1-3-LB-24_20161016           | 10/16/2016  |
| Fluvial | DR1-3  | DR1-3_DR1-3-LS-15_20120423           | 4/23/2012   |
| Fluvial | DR1-3  | DR1-3_DR1-3-LS-17_20130411           | 4/11/2013   |
| Fluvial | DR1-3  | DR1-3_DR1-3-LS-19_20140426           | 4/26/2014   |
| Fluvial | DR1-3  | DR1-3_DR1-3-LS-21_20150408           | 4/8/2015    |
| Fluvial | DR1-3  | DR1-3_DR1-3-LS-23_20160423           | 4/23/2016   |
| Fluvial | DR1-3  | DR1-3_DR1-5-EBT-14_20131109          | 4/21/2017   |
| Fluvial | DR1-4  | DR1-4_DR1-4-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR1-4  | DR1-4_DR1-4-LA-22_20151007           | 10/7/2015   |
| Fluvial | DR1-4  | DR1-4_DR1-4-LB-16_20121019           | 10/19/2012  |
| Fluvial | DR1-4  | DR1-4_DR1-4-LB-20_20141019           | 10/19/2014  |
| Fluvial | DR1-4  | DR1-4_DR1-4-LB-24_20161016           | 10/16/2016  |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-11_20130206          | 2/6/2013    |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-12_20130512          | 5/12/2013   |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-13_20130820          | 8/20/2013   |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-14_20131109          | 11/9/2013   |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-15_20140207          | 2/7/2014    |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-16_20140508          | 5/8/2014    |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-17_20140806          | 8/6/2014    |
| Fluvial | DR1-5  | DR1-5_DR1-5-EBT-18_20141106          | 11/6/2014   |
| Fluvial | DR1-5  | DR1-5_DR1-5-LB-16_20121020           | 10/20/2012  |
| Fluvial | DR1-5  | DR1-5_DR1-5-LB-24_20161013           | 10/13/2016  |
| Fluvial | DR1-5  | DR1-5_DR1-5-LS-15_20120422           | 4/22/2012   |
| Fluvial | DR1-5  | DR1-5_DR1-5-LS-23_20160424           | 4/24/2016   |
| Fluvial | DR1-5  | DR1-5_DR1-5-LS-25_20170420           | 4/20/2017   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-11_20130206        | 2/6/2013    |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-12_20130511        | 5/11/2013   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-13_20130820        | 8/20/2013   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-14_20131109        | 11/9/2013   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-15_20140207        | 2/7/2014    |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-16_20140508        | 5/8/2014    |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-17_20140806        | 8/6/2014    |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-EBT-18_20141107        | 11/7/2014   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-LB-16_20121020         | 10/20/2012  |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-LB-24_20161013         | 10/13/2016  |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-LS-15_20120422         | 4/22/2012   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-LS-23_20160424         | 4/24/2016   |
| Fluvial | DR1-5A | DR1-5A_DR1-5A-LS-25_20170420         | 4/20/2017   |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-11_20130206          | 2/6/2013    |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-12_20130512          | 5/12/2013   |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-13_20130816          | 8/16/2013   |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-14_20131109          | 11/9/2013   |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-15_20140209          | 2/9/2014    |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-16_20140508          | 5/8/2014    |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-17_20140807          | 8/7/2014    |
| Fluvial | DR1-6  | DR1-6_DR1-6-EBT-18_20141107          | 11/7/2014   |
| Fluvial | DR1-6  | DR1-6_DR1-6-LB-16_20121020           | 10/20/2012  |
| Fluvial | DR1-6  | DR1-6_DR1-6-LB-24_20161014           | 10/14/2016  |
| Fluvial | DR1-6  | DR1-6_DR1-6-LS-15_20120422           | 4/22/2012   |
| Fluvial | DR1-6  | DR1-6_DR1-6-LS-23_20160424           | 4/24/2016   |
| Fluvial | DR1-6  | DR1-6_DR1-6-LS-25_20170420           | 4/20/2017   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-11_20130206        | 2/6/2013    |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-12_20130512        | 5/12/2013   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-13_20130816        | 8/16/2013   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-14_20131109        | 11/9/2013   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-15_20140209        | 2/9/2014    |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-16_20140508        | 5/8/2014    |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-17_20140807        | 8/7/2014    |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-EBT-18_20141107        | 11/7/2014   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-LB-16_20121020         | 10/20/2012  |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-LB-24_20161014         | 10/14/2016  |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-LS-15_20120422         | 4/22/2012   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-LS-23_20160424         | 4/24/2016   |
| Fluvial | DR1-6A | DR1-6A_DR1-6A-LS-25_20170420         | 4/20/2017   |
| Fluvial | DR1-7  | DR1-7_DR1-7-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR1-7  | DR1-7_DR1-7-LA-22_20151007           | 10/7/2015   |
| Fluvial | DR1-7  | DR1-7_DR1-7-LB-16_20121019           | 10/19/2012  |
| Fluvial | DR1-7  | DR1-7_DR1-7-LB-20_20141019           | 10/19/2014  |
| Fluvial | DR1-7  | DR1-7_DR1-7-LB-24_20161014           | 10/14/2016  |
| Fluvial | DR1-8  | DR1-8_DR1-8-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR1-8  | DR1-8_DR1-8-LA-22_20151007           | 10/7/2015   |
| Fluvial | DR1-8  | DR1-8_DR1-8-LB-16_20121019           | 10/19/2012  |
| Fluvial | DR1-8  | DR1-8_DR1-8-LB-20_20141018           | 10/18/2014  |
| Fluvial | DR1-8  | DR1-8_DR1-8-LB-24_20161013           | 10/13/2016  |
| Fluvial | DR2-1  | DR2-1_DR2-1-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR2-1  | DR2-1_DR2-1-LA-22_20151006           | 10/6/2015   |
| Fluvial | DR2-1  | DR2-1_DR2-1-LB-16_20121021           | 10/21/2012  |
| Fluvial | DR2-1  | DR2-1_DR2-1-LB-20_20141020           | 10/20/2014  |
| Fluvial | DR2-1  | DR2-1_DR2-1-LB-24_20161015           | 10/15/2016  |
| Fluvial | DR2-1  | DR2-1_DR2-1-LS-15_20120423           | 4/23/2012   |
| Fluvial | DR2-1  | DR2-1_DR2-1-LS-17_20130410           | 4/10/2013   |
| Fluvial | DR2-1  | DR2-1_DR2-1-LS-19_20140424           | 4/24/2014   |
| Fluvial | DR2-1  | DR2-1_DR2-1-LS-21_20150410           | 4/10/2015   |
| Fluvial | DR2-1  | DR2-1_DR2-1-LS-23_20160421           | 4/21/2016   |

| Aquifer | Well      | Unique Sample ID for Risk Assessment | Sample Date |
|---------|-----------|--------------------------------------|-------------|
| Fluvial | DR2-1     | DR2-1_DR2-1-LS-25_20170419           | 4/19/2017   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-11_20130209          | 2/9/2013    |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-12_20130510          | 5/10/2013   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-13_20130814          | 8/14/2013   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-14_20131106          | 11/6/2013   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-15_20140210          | 2/10/2014   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-16_20140513          | 5/13/2014   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-17_20140812          | 8/12/2014   |
| Fluvial | DR2-2     | DR2-2_DR2-2-EBT-18_20141110          | 11/10/2014  |
| Fluvial | DR2-2     | DR2-2_DR2-2-LB-16_20121022           | 10/22/2012  |
| Fluvial | DR2-2     | DR2-2_DR2-2-LB-24_20161013           | 10/13/2016  |
| Fluvial | DR2-2     | DR2-2_DR2-2-LS-15_20120420           | 4/20/2012   |
| Fluvial | DR2-2     | DR2-2_DR2-2-LS-23_20160422           | 4/22/2016   |
| Fluvial | DR2-2     | DR2-2_DR2-2-LS-25_20170419           | 4/19/2017   |
| Fluvial | DR2-3     | DR2-3_DR2-3-LA-18_20131012           | 10/12/2013  |
| Fluvial | DR2-3     | DR2-3_DR2-3-LA-22_20151006           | 10/6/2015   |
| Fluvial | DR2-3     | DR2-3_DR2-3-LB-16_20121021           | 10/21/2012  |
| Fluvial | DR2-3     | DR2-3_DR2-3-LB-20_20141020           | 10/20/2014  |
| Fluvial | DR2-3     | DR2-3_DR2-3-LB-24_20161017           | 10/17/2016  |
| Fluvial | DR2-3     | DR2-3_DR2-3-LS-15_20120423           | 4/23/2012   |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-12_20130513  | 5/13/2013   |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-13_20130817  | 8/17/2013   |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-14_20131110  | 11/10/2013  |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-15_20140208  | 2/8/2014    |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-16_20140509  | 5/9/2014    |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-17_20140808  | 8/8/2014    |
| Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-18_20141108  | 11/8/2014   |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-11_20130207  | 2/7/2013    |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-12_20130512  | 5/12/2013   |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-13_20130816  | 8/16/2013   |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-14_20131109  | 11/9/2013   |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-15_20140209  | 2/9/2014    |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-16_20140509  | 5/9/2014    |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-17_20140807  | 8/7/2014    |
| Fluvial | IW101-07A | IW101-07A_IW101-07A-EBT-18_20141108  | 11/8/2014   |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-11_20130207  | 2/7/2013    |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-12_20130513  | 5/13/2013   |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-13_20130816  | 8/16/2013   |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-14_20131109  | 11/9/2013   |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-15_20140209  | 2/9/2014    |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-16_20140509  | 5/9/2014    |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-17_20140807  | 8/7/2014    |
| Fluvial | IW101-07B | IW101-07B_IW101-07B-EBT-18_20141108  | 11/8/2014   |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-11_20130207  | 2/7/2013    |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-12_20130509  | 5/9/2013    |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-13_20130816  | 8/16/2013   |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-14_20131109  | 11/9/2013   |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-15_20140209  | 2/9/2014    |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-16_20140509  | 5/9/2014    |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-17_20140807  | 8/7/2014    |
| Fluvial | IW101-07C | IW101-07C_IW101-07C-EBT-18_20141108  | 11/8/2014   |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-11_20130205    | 2/5/2013    |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-12_20130507    | 5/7/2013    |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-13_20130818    | 8/18/2013   |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-14_20131107    | 11/7/2013   |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-15_20140206    | 2/6/2014    |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-16_20140507    | 5/7/2014    |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-17_20140804    | 8/4/2014    |
| Fluvial | IW21-01A  | IW21-01A_IW21-01A-EBT-18_20141111    | 11/11/2014  |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-11_20130205    | 2/5/2013    |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-12_20130510    | 5/10/2013   |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-13_20130818    | 8/18/2013   |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-14_20131107    | 11/7/2013   |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-15_20140206    | 2/6/2014    |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-16_20140507    | 5/7/2014    |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-17_20140804    | 8/4/2014    |
| Fluvial | IW21-01B  | IW21-01B_IW21-01B-EBT-18_20141105    | 11/5/2014   |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-11_20130206    | 2/6/2013    |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-12_20130510    | 5/10/2013   |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-13_20130817    | 8/17/2013   |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-14_20131108    | 11/8/2013   |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-15_20140207    | 2/7/2014    |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-16_20140507    | 5/7/2014    |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-17_20140805    | 8/5/2014    |
| Fluvial | IW21-02A  | IW21-02A_IW21-02A-EBT-18_20141106    | 11/6/2014   |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-11_20130206    | 2/6/2013    |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-12_20130510    | 5/10/2013   |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-13_20130817    | 8/17/2013   |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-14_20131108    | 11/8/2013   |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-15_20140207    | 2/7/2014    |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-16_20140507    | 5/7/2014    |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-17_20140805    | 8/5/2014    |
| Fluvial | IW21-02B  | IW21-02B_IW21-02B-EBT-18_20141105    | 11/5/2014   |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-11_20130206    | 2/6/2013    |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-12_20130508    | 5/8/2013    |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-13_20130819    | 8/19/2013   |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-14_20131108    | 11/8/2013   |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-15_20140206    | 2/6/2014    |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-16_20140508    | 5/8/2014    |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-17_20140806    | 8/6/2014    |
| Fluvial | IW21-03A  | IW21-03A_IW21-03A-EBT-18_20141105    | 11/5/2014   |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-11_20130207    | 2/7/2013    |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-12_20130511    | 5/11/2013   |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-13_20130819    | 8/19/2013   |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-14_20131108    | 11/8/2013   |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-15_20140206    | 2/6/2014    |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-16_20140508    | 5/8/2014    |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-17_20140806    | 8/6/2014    |
| Fluvial | IW21-03B  | IW21-03B_IW21-03B-EBT-18_20141106    | 11/6/2014   |
| Fluvial | IW21-04A  | IW21-04A_IW21-04A-EBT-11_20130206    | 2/6/2013    |
| Fluvial | IW21-04A  | IW21-04A_IW21-04A-EBT-12_20130511    | 5/11/2013   |
| Fluvial | IW21-04A  | IW21-04A_IW21-04A-EBT-13_20130819    | 8/19/2013   |
| Fluvial | IW21-04A  | IW21-04A_IW21-04A-EBT-14_20131108    | 11/8/2013   |

Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well     | Unique Sample ID for Risk Assessment | Sample Date | Aquifer | Well    | Unique Sample ID for Risk Assessment | Sample Date |
|---------|----------|--------------------------------------|-------------|---------|---------|--------------------------------------|-------------|
| Fluvial | IW21-04A | IW21-04A_IW21-04A-EBT-15_20140207    | 2/7/2014    | Fluvial | MW-206A | MW-206A_MW-206A-LA-18_20131011       | 10/11/2013  |
| Fluvial | IW21-04A | IW21-04A_IW21-04A-EBT-16_20140507    | 5/7/2014    | Fluvial | MW-206A | MW-206A_MW-206A-LA-22_20151008       | 10/8/2015   |
| Fluvial | IW21-04A | IW21-04A_IW21-04A-EBT-17_20140806    | 8/6/2014    | Fluvial | MW-206A | MW-206A_MW-206A-LB-16_20121020       | 10/20/2012  |
| Fluvial | IW21-04A | IW21-04A_IW21-04A-EBT-18_20141106    | 11/6/2014   | Fluvial | MW-206A | MW-206A_MW-206A-LB-20_20141020       | 10/20/2014  |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-11_20130206    | 2/6/2013    | Fluvial | MW-206A | MW-206A_MW-206A-LB-24_20161014       | 10/14/2016  |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-12_20130508    | 5/8/2013    | Fluvial | MW-206A | MW-206A_MW-206A-LS-15_20120423       | 4/23/2012   |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-13_20130819    | 8/19/2013   | Fluvial | MW-206A | MW-206A_MW-206A-LS-17_20130410       | 4/10/2013   |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-14_20131108    | 11/8/2013   | Fluvial | MW-206A | MW-206A_MW-206A-LS-19_20140425       | 4/25/2014   |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-15_20140207    | 2/7/2014    | Fluvial | MW-206A | MW-206A_MW-206A-LS-21_20150409       | 4/9/2015    |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-16_20140507    | 5/7/2014    | Fluvial | MW-206A | MW-206A_MW-206A-LS-23_20160421       | 4/21/2016   |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-17_20140806    | 8/6/2014    | Fluvial | MW-206A | MW-206A_MW-206A-LS-25_20170420       | 4/20/2017   |
| Fluvial | IW21-04B | IW21-04B_IW21-04B-EBT-18_20141106    | 11/6/2014   | Fluvial | MW-206B | MW-206B_MW-206B-LA-18_20131011       | 10/11/2013  |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-11_20130211      | 2/11/2013   | Fluvial | MW-206B | MW-206B_MW-206B-LA-22_20151008       | 10/8/2015   |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-12_20130508      | 5/8/2013    | Fluvial | MW-206B | MW-206B_MW-206B-LB-16_20121020       | 10/20/2012  |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-13_20130814      | 8/14/2013   | Fluvial | MW-206B | MW-206B_MW-206B-LB-20_20141020       | 10/20/2014  |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-14_20131106      | 11/6/2013   | Fluvial | MW-206B | MW-206B_MW-206B-LB-24_20161014       | 10/14/2016  |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-15_20140205      | 2/5/2014    | Fluvial | MW-206B | MW-206B_MW-206B-LS-15_20120423       | 4/23/2012   |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-16_20140511      | 5/11/2014   | Fluvial | MW-206B | MW-206B_MW-206B-LS-17_20130410       | 4/10/2013   |
| Fluvial | IW85-05  | IW85-05_IW85-05-EBT-18_20141110      | 11/10/2014  | Fluvial | MW-206B | MW-206B_MW-206B-LS-19_20140425       | 4/25/2014   |
| Fluvial | IW85-05  | IW85-05_IW85-5-EBT-17_20140811       | 8/11/2014   | Fluvial | MW-206B | MW-206B_MW-206B-LS-21_20150409       | 4/9/2015    |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-11_20130210      | 2/10/2013   | Fluvial | MW-206B | MW-206B_MW-206B-LS-23_20160421       | 4/21/2016   |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-12_20130509      | 5/9/2013    | Fluvial | MW-206B | MW-206B_MW-206B-LS-25_20170420       | 4/20/2017   |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-13_20130815      | 8/15/2013   | Fluvial | MW-207B | MW-207B_MW-207B-LA-18_20131012       | 10/12/2013  |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-14_20131107      | 11/7/2013   | Fluvial | MW-207B | MW-207B_MW-207B-LA-22_20151008       | 10/8/2015   |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-15_20140205      | 2/5/2014    | Fluvial | MW-207B | MW-207B_MW-207B-LB-16_20121021       | 10/21/2012  |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-16_20140512      | 5/12/2014   | Fluvial | MW-207B | MW-207B_MW-207B-LB-20_20141020       | 10/20/2014  |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-17_20140812      | 8/12/2014   | Fluvial | MW-207B | MW-207B_MW-207B-LB-24_20161014       | 10/14/2016  |
| Fluvial | IW85-06  | IW85-06_IW85-06-EBT-18_20141110      | 11/10/2014  | Fluvial | MW-207B | MW-207B_MW-207B-LS-15_20120423       | 4/23/2012   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-11_20130209      | 2/9/2013    | Fluvial | MW-207B | MW-207B_MW-207B-LS-17_20130411       | 4/11/2013   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-12_20130511      | 5/11/2013   | Fluvial | MW-207B | MW-207B_MW-207B-LS-19_20140425       | 4/25/2014   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-13_20130820      | 8/20/2013   | Fluvial | MW-207B | MW-207B_MW-207B-LS-21_20150410       | 4/10/2015   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-14_20131106      | 11/6/2013   | Fluvial | MW-207B | MW-207B_MW-207B-LS-23_20160422       | 4/22/2016   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-15_20140210      | 2/10/2014   | Fluvial | MW-207B | MW-207B_MW-207B-LS-25_20170420       | 4/20/2017   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-16_20140512      | 5/12/2014   | Fluvial | MW-208B | MW-208B_MW-208B-LA-18_20131011       | 10/11/2013  |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-17_20140812      | 8/12/2014   | Fluvial | MW-208B | MW-208B_MW-208B-LA-22_20151008       | 10/8/2015   |
| Fluvial | IW92-01  | IW92-01_IW92-01-EBT-18_20141110      | 11/10/2014  | Fluvial | MW-208B | MW-208B_MW-208B-LB-16_20121020       | 10/20/2012  |
| Fluvial | IW92-02  | IW92-02_IW92-02-EBT-11_20130209      | 2/9/2013    | Fluvial | MW-208B | MW-208B_MW-208B-LB-20_20141020       | 10/20/2014  |
| Fluvial | IW92-02  | IW92-02_IW92-02-EBT-12_20130507      | 5/7/2013    | Fluvial | MW-208B | MW-208B_MW-208B-LB-24_20161014       | 10/14/2016  |
| Fluvial | IW92-02  | IW92-02_IW92-02-EBT-13_20130814      | 8/14/2013   | Fluvial | MW-208B | MW-208B_MW-208B-LS-15_20120423       | 4/23/2012   |
| Fluvial | IW92-02  | IW92-02_IW92-02-EBT-14_20131107      | 11/7/2013   | Fluvial | MW-208B | MW-208B_MW-208B-LS-17_20130410       | 4/10/2013   |
| Fluvial | MW-199B  | MW-199B_MW-199B-LS-17_20130410       | 4/10/2013   | Fluvial | MW-208B | MW-208B_MW-208B-LS-19_20140425       | 4/25/2014   |
| Fluvial | MW-199B  | MW-199B_MW-199B-LS-19_20140426       | 4/26/2014   | Fluvial | MW-208B | MW-208B_MW-208B-LS-21_20150410       | 4/10/2015   |
| Fluvial | MW-199B  | MW-199B_MW-199B-LS-21_20150409       | 4/9/2015    | Fluvial | MW-208B | MW-208B_MW-208B-LS-23_20160421       | 4/21/2016   |
| Fluvial | MW-199B  | MW-199B_MW-199B-LS-23_20160422       | 4/22/2016   | Fluvial | MW-208B | MW-208B_MW-208B-LS-25_20170420       | 4/20/2017   |
| Fluvial | MW-199B  | MW-199B_MW-199B-LS-25_20170421       | 4/21/2017   | Fluvial | MW-209B | MW-209B_MW-209B-LA-18_20131011       | 10/11/2013  |
| Fluvial | MW-200   | MW-200_MW-200-LA-18_20131012         | 10/12/2013  | Fluvial | MW-209B | MW-209B_MW-209B-LA-22_20151007       | 10/7/2015   |
| Fluvial | MW-200   | MW-200_MW-200-LA-22_20151008         | 10/8/2015   | Fluvial | MW-209B | MW-209B_MW-209B-LB-16_20121020       | 10/20/2012  |
| Fluvial | MW-200   | MW-200_MW-200-LB-16_20121020         | 10/20/2012  | Fluvial | MW-209B | MW-209B_MW209B-LB-20_20141019        | 10/19/2014  |
| Fluvial | MW-200   | MW-200_MW-200-LB-20_20141020         | 10/20/2014  | Fluvial | MW-209B | MW-209B_MW-209B-LB-24_20161013       | 10/13/2016  |
| Fluvial | MW-200   | MW-200_MW-200-LB-24_20161015         | 10/15/2016  | Fluvial | MW-209B | MW-209B_MW-209B-LS-15_20120423       | 4/23/2012   |
| Fluvial | MW-200   | MW-200_MW-200-LS-15_20120423         | 4/23/2012   | Fluvial | MW-209B | MW-209B_MW-209B-LS-17_20130410       | 4/10/2013   |
| Fluvial | MW-200   | MW-200_MW-200-LS-17_20130410         | 4/10/2013   | Fluvial | MW-209B | MW-209B_MW-209B-LS-19_20140425       | 4/25/2014   |
| Fluvial | MW-200   | MW-200_MW-200-LS-19_20140425         | 4/25/2014   | Fluvial | MW-209B | MW-209B_MW-209B-LS-21_20150409       | 4/9/2015    |
| Fluvial | MW-200   | MW-200_MW-200-LS-21_20150409         | 4/9/2015    | Fluvial | MW-209B | MW-209B_MW-209B-LS-23_20160422       | 4/22/2016   |
| Fluvial | MW-200   | MW-200_MW-200-LS-23_20160421         | 4/21/2016   | Fluvial | MW-209B | MW-209B_MW-209B-LS-25_20170422       | 4/22/2017   |
| Fluvial | MW-200   | MW-200_MW-200-LS-25_20170420         | 4/20/2017   | Fluvial | MW-21   | MW-21_MW-21-EBT-11_20130207          | 2/7/2013    |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-11_20130208      | 2/8/2013    | Fluvial | MW-21   | MW-21_MW-21-EBT-12_20130510          | 5/10/2013   |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-12_20130511      | 5/11/2013   | Fluvial | MW-21   | MW-21_MW-21-EBT-13_20130817          | 8/17/2013   |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-13_20130819      | 8/19/2013   | Fluvial | MW-21   | MW-21_MW-21-EBT-14_20131108          | 11/8/2013   |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-14_20131107      | 11/7/2013   | Fluvial | MW-21   | MW-21_MW-21-EBT-15_20140208          | 2/8/2014    |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-15_20140210      | 2/10/2014   | Fluvial | MW-21   | MW-21_MW-21-EBT-16_20140507          | 5/7/2014    |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-16_20140510      | 5/10/2014   | Fluvial | MW-26   | MW-26_MW26-LA-22_20151007            | 10/7/2015   |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-17_20140810      | 8/10/2014   | Fluvial | MW-26   | MW-26_MW-26-LB-16_20121021           | 10/21/2012  |
| Fluvial | MW-203B  | MW-203B_MW-203B-EBT-18_20141109      | 11/9/2014   | Fluvial | MW-26   | MW-26_MW26-LB-20_20141020            | 10/20/2014  |
| Fluvial | MW-203B  | MW-203B_MW-203B-LB-16_20121021       | 10/21/2012  | Fluvial | MW-26   | MW-26_MW-26-LB-24_20161015           | 10/15/2016  |
| Fluvial | MW-203B  | MW-203B_MW-203B-LB-24_20161014       | 10/14/2016  | Fluvial | MW-26   | MW-26_MW-26-LS-15_20120423           | 4/23/2012   |
| Fluvial | MW-203B  | MW-203B_MW-203B-LS-15_20120420       | 4/20/2012   | Fluvial | MW-26   | MW-26_MW-26-LS-17_20130410           | 4/10/2013   |
| Fluvial | MW-203B  | MW-203B_MW-203B-LS-23_20160422       | 4/22/2016   | Fluvial | MW-26   | MW-26_MW-26-LS-19_20140424           | 4/24/2014   |
| Fluvial | MW-203B  | MW-203B_MW-203B-LS-25_20170419       | 4/19/2017   | Fluvial | MW-26   | MW-26_MW26-LS-21_20150410            | 4/10/2015   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LA-18_20131011       | 10/11/2013  | Fluvial | MW-26   | MW-26_MW-26-LS-23_20160421           | 4/21/2016   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LA-22_20151008       | 10/8/2015   | Fluvial | MW-26   | MW-26_MW-26-LS-25_20170419           | 4/19/2017   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LB-16_20121020       | 10/20/2012  | Fluvial | MW-260  | MW-260_MW-260-LA-18_20131011         | 10/11/2013  |
| Fluvial | MW-204A  | MW-204A_MW-204A-LB-20_20141020       | 10/20/2014  | Fluvial | MW-260  | MW-260_MW-260-LA-22_20151007         | 10/7/2015   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LB-24_20161014       | 10/14/2016  | Fluvial | MW-260  | MW-260_MW-260-LB-20_20141020         | 10/20/2014  |
| Fluvial | MW-204A  | MW-204A_MW-204A-LS-15_20120423       | 4/23/2012   | Fluvial | MW-260  | MW-260_MW-260-LB-24_20161015         | 10/15/2016  |
| Fluvial | MW-204A  | MW-204A_MW-204A-LS-17_20130410       | 4/10/2013   | Fluvial | MW-260  | MW-260_MW-260-LS-19_20140425         | 4/25/2014   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LS-19_20140425       | 4/25/2014   | Fluvial | MW-260  | MW-260_MW-260-LS-21_20150410         | 4/10/2015   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LS-21_20150409       | 4/9/2015    | Fluvial | MW-260  | MW-260_MW-260-LS-23_20160422         | 4/22/2016   |
| Fluvial | MW-204A  | MW-204A_MW-204A-LS-23_20160422       | 4/22/2016   | Fluvial | MW-261  | MW-261_MW-261-LA-18_20131011         | 10/11/2013  |
| Fluvial | MW-204A  | MW-204A_MW-204A-LS-25_20170419       | 4/19/2017   | Fluvial | MW-261  | MW-261_MW-261-LA-22_20151008         | 10/8/2015   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LA-18_20131011       | 10/11/2013  | Fluvial | MW-261  | MW-261_MW261-LB-20_20141020          | 10/20/2014  |
| Fluvial | MW-204B  | MW-204B_MW-204B-LA-22_20151008       | 10/8/2015   | Fluvial | MW-261  | MW-261_MW-261-LB-24_20161014         | 10/14/2016  |
| Fluvial | MW-204B  | MW-204B_MW-204B-LB-16_20121020       | 10/20/2012  | Fluvial | MW-261  | MW-261_MW-261-LS-19_20140425         | 4/25/2014   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LB-20_20141020       | 10/20/2014  | Fluvial | MW-261  | MW-261_MW-261-LS-21_20150409         | 4/9/2015    |
| Fluvial | MW-204B  | MW-204B_MW-204B-LB-24_20161014       | 10/14/2016  | Fluvial | MW-261  | MW-261_MW-261-LS-23_20160421         | 4/21/2016   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LS-15_20120423       | 4/23/2012   | Fluvial | MW-263  | MW-263_MW-263-LA-22_20151007         | 10/7/2015   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LS-17_20130410       | 4/10/2013   | Fluvial | MW-263  | MW-263_MW-263-LB-24_20161015         | 10/15/2016  |
| Fluvial | MW-204B  | MW-204B_MW-204B-LS-19_20140425       | 4/25/2014   | Fluvial | MW-263  | MW-263_MW-263-LS-23_20160422         | 4/22/2016   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LS-21_20150409       | 4/9/2015    | Fluvial | MW-263  | MW-263_MW-263-LS-25_20170420         | 4/20/2017   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LS-23_20160422       | 4/22/2016   | Fluvial | MW-263  | MW-263_MW-263-SRIPhase1_20150517     | 5/17/2015   |
| Fluvial | MW-204B  | MW-204B_MW-204B-LS-25_20170419       | 4/19/2017   | Fluvial | MW-265  | MW-265_MW-265-LA-22_20151007         | 10/7/2015   |
| Fluvial | MW-205B  | MW-205B_MW-205B-LA-18_20131011       | 10/11/2013  |         |         |                                      |             |

Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well       | Unique Sample ID for Risk Assessment  | Sample Date |
|---------|------------|---------------------------------------|-------------|
| Fluvial | MW-267     | MW-267_MW-267-LS-23_20160421          | 4/21/2016   |
| Fluvial | MW-267     | MW-267_MW-267-LS-25_20170419          | 4/19/2017   |
| Fluvial | MW-267     | MW-267_MW-267-SRIPhase1_20150516      | 5/16/2015   |
| Fluvial | MW-269     | MW-269_MW-269_20150731                | 7/31/2015   |
| Fluvial | MW-269     | MW-269_MW-269-LA-22_20151008          | 10/8/2015   |
| Fluvial | MW-269     | MW-269_MW-269-LB-24_20161015          | 10/15/2016  |
| Fluvial | MW-269     | MW-269_MW-269-LS-23_20160423          | 4/23/2016   |
| Fluvial | MW-269     | MW-269_MW-269-LS-25_20170422          | 4/22/2017   |
| Fluvial | MW-270     | MW-270_MW-270_20150730                | 7/30/2015   |
| Fluvial | MW-270     | MW-270_MW-270-LA-22_20151007          | 10/7/2015   |
| Fluvial | MW-270     | MW-270_MW-270-LB-24_20161015          | 10/15/2016  |
| Fluvial | MW-270     | MW-270_MW-270-LS-23_20160421          | 4/21/2016   |
| Fluvial | MW-270     | MW-270_MW-270-LS-25_20170419          | 4/19/2017   |
| Fluvial | MW-270     | MW-270_MW-270-SRIPhase1_20150515      | 5/15/2015   |
| Fluvial | MW-271     | MW-271_MW-271-LA-22_20151007          | 10/7/2015   |
| Fluvial | MW-271     | MW-271_MW-271-LB-24_20161015          | 10/15/2016  |
| Fluvial | MW-271     | MW-271_MW-271-LS-23_20160421          | 4/21/2016   |
| Fluvial | MW-271     | MW-271_MW-271-LS-25_20170419          | 4/19/2017   |
| Fluvial | MW-271     | MW-271_MW-271-SRIPhase1_20150516      | 5/16/2015   |
| Fluvial | MW-279     | MW-279_MW-279-LS-25_20170420          | 4/20/2017   |
| Fluvial | MW-279     | MW-279_MW279-SRI1216_20161209         | 12/9/2016   |
| Fluvial | MW-280     | MW-280_MW-280-LS-25_20170419          | 4/19/2017   |
| Fluvial | MW-280     | MW-280_MW280-SRI1216_20161209         | 12/9/2016   |
| Fluvial | MW-281     | MW-281_MW-281-LS-25_20170421          | 4/21/2017   |
| Fluvial | MW-281     | MW-281_MW281-SRI1216_20161209         | 12/9/2016   |
| Fluvial | MW-39      | MW-39_MW-39-LA-18_20131011            | 10/11/2013  |
| Fluvial | MW-39      | MW-39_MW39-LA-22_20151008             | 10/8/2015   |
| Fluvial | MW-39      | MW-39_MW-39-LB-16_20121020            | 10/20/2012  |
| Fluvial | MW-39      | MW-39_MW39-LB-20_20141019             | 10/19/2014  |
| Fluvial | MW-39      | MW-39_MW-39-LB-24_20161014            | 10/14/2016  |
| Fluvial | MW-39      | MW-39_MW-39-LS-15_20120423            | 4/23/2012   |
| Fluvial | MW-39      | MW-39_MW-39-LS-17_20130410            | 4/10/2013   |
| Fluvial | MW-39      | MW-39_MW-39-LS-19_20140425            | 4/25/2014   |
| Fluvial | MW-39      | MW-39_MW-39-LS-21_20150409            | 4/9/2015    |
| Fluvial | MW-39      | MW-39_MW-39-LS-23_20160422            | 4/22/2016   |
| Fluvial | MW-39      | MW-39_MW-39-LS-25_20170420            | 4/20/2017   |
| Fluvial | MW-50      | MW-50_MW-50-LB-16_20121019            | 10/19/2012  |
| Fluvial | MW-50      | MW-50_MW50-LB-20_20141019             | 10/19/2014  |
| Fluvial | MW-50      | MW-50_MW-50-LB-24_20161015            | 10/15/2016  |
| Fluvial | MW-52      | MW-52_MW-52-LA-18_20131011            | 10/11/2013  |
| Fluvial | MW-52      | MW-52_MW52-LA-22_20151007             | 10/7/2015   |
| Fluvial | MW-52      | MW-52_MW-52-LB-16_20121019            | 10/19/2012  |
| Fluvial | MW-52      | MW-52_MW52-LB-20_20141020             | 10/20/2014  |
| Fluvial | MW-52      | MW-52_MW-52-LB-24_20161015            | 10/15/2016  |
| Fluvial | MW-62      | MW-62_MW-62-EBT-11_20130211           | 2/11/2013   |
| Fluvial | MW-62      | MW-62_MW-62-EBT-12_20130509           | 5/9/2013    |
| Fluvial | MW-62      | MW-62_MW-62-EBT-13_20130820           | 8/20/2013   |
| Fluvial | MW-62      | MW-62_MW-62-EBT-14_20131111           | 11/11/2013  |
| Fluvial | MW-62      | MW-62_MW-62-EBT-15_20140211           | 2/11/2014   |
| Fluvial | MW-62      | MW-62_MW-62-EBT-16_20140510           | 5/10/2014   |
| Fluvial | MW-62      | MW-62_MW-62-EBT-17_20140810           | 8/10/2014   |
| Fluvial | MW-62      | MW-62_MW-62-EBT-18_20141109           | 11/9/2014   |
| Fluvial | MW-62      | MW-62_MW-62-LB-16_20121022            | 10/22/2012  |
| Fluvial | MW-62      | MW-62_MW-62-LB-24_20161014            | 10/14/2016  |
| Fluvial | MW-62      | MW-62_MW-62-LS-15_20120421            | 4/21/2012   |
| Fluvial | MW-62      | MW-62_MW-62-LS-23_20160425            | 4/25/2016   |
| Fluvial | MW-62      | MW-62_MW-62-LS-25_20170421            | 4/21/2017   |
| Fluvial | MW-63A     | MW-63A_MW-63A-LA-18_20131012          | 10/12/2013  |
| Fluvial | MW-63A     | MW-63A_MW63A-LA-22_20151007           | 10/7/2015   |
| Fluvial | MW-63A     | MW-63A_MW-63A-LB-16_20121021          | 10/21/2012  |
| Fluvial | MW-63A     | MW-63A_MW63A-LB-20_20141021           | 10/21/2014  |
| Fluvial | MW-63A     | MW-63A_MW-63A-LB-24_20161014          | 10/14/2016  |
| Fluvial | MW-63B     | MW-63B_MW-63B-LA-18_20131012          | 10/12/2013  |
| Fluvial | MW-63B     | MW-63B_MW63B-LA-22_20151007           | 10/7/2015   |
| Fluvial | MW-63B     | MW-63B_MW-63B-LB-16_20121021          | 10/21/2012  |
| Fluvial | MW-63B     | MW-63B_MW63B-LB-20_20141021           | 10/21/2014  |
| Fluvial | MW-63B     | MW-63B_MW-63B-LB-24_20161014          | 10/14/2016  |
| Fluvial | MW-64      | MW-64_MW-64-LA-18_20131012            | 10/12/2013  |
| Fluvial | MW-64      | MW-64_MW64-LA-22_20151007             | 10/7/2015   |
| Fluvial | MW-64      | MW-64_MW-64-LB-16_20121021            | 10/21/2012  |
| Fluvial | MW-64      | MW-64_MW64-LB-20_20141020             | 10/20/2014  |
| Fluvial | MW-64      | MW-64_MW-64-LB-24_20161015            | 10/15/2016  |
| Fluvial | MW-64      | MW-64_MW-64-LS-15_20120423            | 4/23/2012   |
| Fluvial | MW-64      | MW-64_MW-64-LS-17_20130410            | 4/10/2013   |
| Fluvial | MW-64      | MW-64_MW-64-LS-19_20140425            | 4/25/2014   |
| Fluvial | MW-64      | MW-64_MW64-LS-21_20150410             | 4/10/2015   |
| Fluvial | MW-64      | MW-64_MW-64-LS-23_20160421            | 4/21/2016   |
| Fluvial | MW-64      | MW-64_MW-64-LS-25_20170419            | 4/19/2017   |
| Fluvial | MW-85      | MW-85_MW-85-EBT-11_20130208           | 2/8/2013    |
| Fluvial | MW-85      | MW-85_MW-85-EBT-12_20130510           | 5/10/2013   |
| Fluvial | MW-85      | MW-85_MW-85-EBT-13_20130814           | 8/14/2013   |
| Fluvial | MW-85      | MW-85_MW-85-EBT-14_20131106           | 11/6/2013   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-11_20130207 | 2/7/2013    |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-12_20130508 | 5/8/2013    |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-13_20130815 | 8/15/2013   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-14_20131108 | 11/8/2013   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-15_20140207 | 2/7/2014    |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-16_20140510 | 5/10/2014   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-17_20140809 | 8/9/2014    |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-EBT-18_20141108 | 11/8/2014   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-LB-16_20121019  | 10/19/2012  |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-LB-24_20161014  | 10/14/2016  |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-LS-15_20120422  | 4/22/2012   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-LS-23_20160423  | 4/23/2016   |
| Fluvial | PMW101-04B | PMW101-04B_PMW101-04B-LS-25_20170421  | 4/21/2017   |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LA-18_20131012  | 10/12/2013  |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LA-22_20151007  | 10/7/2015   |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LB-20_20141019  | 10/19/2014  |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LB-24_20161014  | 10/14/2016  |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LS-17_20130410  | 4/10/2013   |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LS-19_20140426  | 4/26/2014   |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LS-21_20150408  | 4/26/2015   |

| Aquifer | Well       | Unique Sample ID for Risk Assessment  | Sample Date |
|---------|------------|---------------------------------------|-------------|
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LS-23_20160423  | 4/23/2016   |
| Fluvial | PMW101-06A | PMW101-06A_PMW101-06A-LS-25_20170420  | 4/20/2017   |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LA-18_20131012  | 10/12/2013  |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LA-22_20151007  | 10/7/2015   |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LB-20_20141019  | 10/19/2014  |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LB-24_20161014  | 10/14/2016  |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LS-17_20130410  | 4/10/2013   |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LS-19_20140426  | 4/26/2014   |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LS-21_20150408  | 4/8/2015    |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LS-23_20160423  | 4/23/2016   |
| Fluvial | PMW101-06B | PMW101-06B_PMW101-06B-LS-25_20170420  | 4/20/2017   |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-11_20130207 | 2/7/2013    |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-12_20130513 | 5/13/2013   |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-13_20130815 | 8/15/2013   |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-14_20131110 | 11/10/2013  |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-15_20140207 | 2/7/2014    |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-16_20140510 | 5/10/2014   |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-17_20140808 | 8/8/2014    |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-EBT-18_20141108 | 11/8/2014   |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-LB-24_20161014  | 10/14/2016  |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-LS-23_20160423  | 4/23/2016   |
| Fluvial | PMW101-07A | PMW101-07A_PMW101-07A-LS-25_20170420  | 4/20/2017   |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-11_20130207 | 2/7/2013    |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-12_20130512 | 5/12/2013   |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-13_20130815 | 8/15/2013   |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-14_20131110 | 11/10/2013  |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-15_20140208 | 2/8/2014    |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-16_20140510 | 5/10/2014   |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-17_20140808 | 8/8/2014    |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-EBT-18_20141108 | 11/8/2014   |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-LB-24_20161014  | 10/14/2016  |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-LS-23_20160424  | 4/24/2016   |
| Fluvial | PMW101-07B | PMW101-07B_PMW101-07B-LS-25_20170420  | 4/20/2017   |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-11_20130205     | 2/5/2013    |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-12_20130511     | 5/11/2013   |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-13_20130817     | 8/17/2013   |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-14_20131107     | 11/7/2013   |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-15_20140206     | 2/6/2014    |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-16_20140507     | 5/7/2014    |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-17_20140805     | 8/5/2014    |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-EBT-18_20141105     | 11/5/2014   |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-LB-24_20161013      | 10/13/2016  |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-LS-23RE_20160523    | 5/23/2016   |
| Fluvial | PMW21-01   | PMW21-01_PMW21-01-LS-25_20170420      | 4/20/2017   |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-11_20130207     | 2/7/2013    |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-12_20130511     | 5/11/2013   |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-13_20130818     | 8/18/2013   |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-14_20131108     | 11/8/2013   |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-15_20140206     | 2/6/2014    |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-16_20140508     | 5/8/2014    |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-17_20140805     | 8/5/2014    |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-EBT-18_20141105     | 11/5/2014   |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-LB-24_20161013      | 10/13/2016  |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-LS-23RE_20160523    | 5/23/2016   |
| Fluvial | PMW21-02   | PMW21-02_PMW21-02-LS-25_20170420      | 4/20/2017   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LA-18_20131012      | 10/12/2013  |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LA-22_20151007      | 10/7/2015   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LB-16_20121019      | 10/19/2012  |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LB-20_20141018      | 10/18/2014  |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LB-24_20161013      | 10/13/2016  |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-15_20120423      | 4/23/2012   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-17_20130411      | 4/11/2013   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-19_20140426      | 4/26/2014   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-21_20150408      | 4/8/2015    |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-23_20160423      | 4/23/2016   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-23RE_20160523    | 5/23/2016   |
| Fluvial | PMW21-03   | PMW21-03_PMW21-03-LS-25_20170420      | 4/20/2017   |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04_20160606            | 6/6/2016    |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-11_20130207     | 2/7/2013    |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-12_20130508     | 5/8/2013    |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-13_20130817     | 8/17/2013   |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-14_20131108     | 11/8/2013   |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-15_20140208     | 2/8/2014    |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-16_20140507     | 5/7/2014    |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-17_20140806     | 8/6/2014    |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-EBT-18_20141106     | 11/6/2014   |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-LB-24_20161013      | 10/13/2016  |
| Fluvial | PMW21-04   | PMW21-04_PMW21-04-LS-25_20170420      | 4/20/2017   |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LA-18_20131012      | 10/12/2013  |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LB-22_20151007      | 10/7/2015   |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LB-16_20121019      | 10/19/2012  |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LB-20_20141018      | 10/18/2014  |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LB-24_20161014      | 10/14/2016  |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LS-15_20120423      | 4/23/2012   |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LS-17_20130411      | 4/11/2013   |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LS-19_20140426      | 4/26/2014   |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LS-21_20150408      | 4/8/2015    |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LS-23_20160423      | 4/23/2016   |
| Fluvial | PMW21-05   | PMW21-05_PMW21-05-LS-25_20170420      | 4/20/2017   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-11_20130209     | 2/9/2013    |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-12_20130510     | 5/10/2013   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-13_20130813     | 8/13/2013   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-14_20131105     | 11/5/2013   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-15_20140210     | 2/10/2014   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-16_20140511     | 5/11/2014   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-17_20140811     | 8/11/2014   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-EBT-18_20141110     | 11/10/2014  |
| Fluvial | PMW85-01   | PMW85-01_PMW-85-01-LB-24_20161015     | 10/15/2016  |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-LS-23_20160421      | 4/21/2016   |
| Fluvial | PMW85-01   | PMW85-01_PMW85-01-LS-25_20170419      | 4/19/2017   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-11_20130209     | 2/9/2013    |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-12_20130508     | 5/8/2013    |

Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well      | Unique Sample ID for Risk Assessment | Sample Date | Aquifer | Well      | Unique Sample ID for Risk Assessment | Sample Date |
|---------|-----------|--------------------------------------|-------------|---------|-----------|--------------------------------------|-------------|
| Fluvial | PMW85-05  | PMW85-05_PMW85-05-EBT-13_20130813    | 8/13/2013   | Fluvial | IW101-04C | IW101-04C_IW101-04C-EBT-14_20131111  | 11/11/2013  |
| Fluvial | DR2-3     | DR2-3_DR2-3-LS-17_20130410           | 4/10/2013   | Fluvial | IW101-04C | IW101-04C_IW101-04C-EBT-15_20140208  | 2/8/2014    |
| Fluvial | DR2-3     | DR2-3_DR2-3-LS-19_20140424           | 4/24/2014   | Fluvial | IW101-04C | IW101-04C_IW101-04C-EBT-16_20140510  | 5/10/2014   |
| Fluvial | DR2-3     | DR2-3_DR2-3-LS-21_20150410           | 4/10/2015   | Fluvial | IW101-04C | IW101-04C_IW101-04C-EBT-17_20140809  | 8/9/2014    |
| Fluvial | DR2-3     | DR2-3_DR2-3-LS-23_20160421           | 4/21/2016   | Fluvial | IW101-04C | IW101-04C_IW101-04C-EBT-18_20141107  | 11/7/2014   |
| Fluvial | DR2-3     | DR2-3_DR2-3-LS-25_20170419           | 4/19/2017   | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-11_20130208  | 2/8/2013    |
| Fluvial | DR2-4     | DR2-4_DR2-4-LA-18_20131012           | 10/12/2013  | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-12_20130513  | 5/13/2013   |
| Fluvial | DR2-4     | DR2-4_DR2-4-LA-22_20151007           | 10/7/2015   | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-13_20130817  | 8/17/2013   |
| Fluvial | DR2-4     | DR2-4_DR2-4-LB-16_20121021           | 10/21/2012  | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-14_20131110  | 11/10/2013  |
| Fluvial | DR2-4     | DR2-4_DR2-4-LB-20_20141020           | 10/20/2014  | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-15_20140208  | 2/8/2014    |
| Fluvial | DR2-4     | DR2-4_DR2-4-LB-24_20161013           | 10/13/2016  | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-16_20140509  | 5/9/2014    |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-11_20130209          | 2/9/2013    | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-17_20140808  | 8/8/2014    |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-12_20130508          | 5/8/2013    | Fluvial | IW101-05A | IW101-05A_IW101-05A-EBT-18_20141109  | 11/9/2014   |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-13_20130814          | 8/14/2013   | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-11_20130208  | 2/8/2013    |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-14_20131105          | 11/5/2013   | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-12_20130513  | 5/13/2013   |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-15_20140210          | 2/10/2014   | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-13_20130817  | 8/17/2013   |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-16_20140512          | 5/12/2014   | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-14_20131110  | 11/10/2013  |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-17_20140811          | 8/11/2014   | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-15_20140208  | 2/8/2014    |
| Fluvial | DR2-5     | DR2-5_DR2-5-EBT-18_20141111          | 11/11/2014  | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-16_20140509  | 5/9/2014    |
| Fluvial | DR2-5     | DR2-5_DR2-5-LB-16_20121019           | 10/19/2012  | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-17_20140808  | 8/8/2014    |
| Fluvial | DR2-5     | DR2-5_DR2-5-LB-24_20161017           | 10/17/2016  | Fluvial | IW101-05B | IW101-05B_IW101-05B-EBT-18_20141109  | 11/9/2014   |
| Fluvial | DR2-5     | DR2-5_DR2-5-LS-15_20120420           | 4/20/2012   | Fluvial | IW101-05C | IW101-05C_IW101-05C-EBT-11_20130208  | 2/8/2013    |
| Fluvial | DR2-5     | DR2-5_DR2-5-LS-23_20160421           | 4/21/2016   | Fluvial | IW92-02   | IW92-02_IW92-02-EBT-16_20140512      | 5/12/2014   |
| Fluvial | DR2-5     | DR2-5_DR2-5-LS-25_20170422           | 4/22/2017   | Fluvial | IW92-02   | IW92-02_IW92-02-EBT-17_20140812      | 8/12/2014   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LA-18_20131012           | 10/12/2013  | Fluvial | IW92-02   | IW92-02_IW92-02-EBT-18_20141110      | 11/10/2014  |
| Fluvial | DR2-6     | DR2-6_DR2-6-LA-22_20151007           | 10/7/2015   | Fluvial | IW92-03   | IW92-03_IW92-03-EBT-11_20130209      | 2/9/2013    |
| Fluvial | DR2-6     | DR2-6_DR2-6-LB-16_20121021           | 10/21/2012  | Fluvial | IW92-03   | IW92-03_IW92-03-EBT-13_20130819      | 8/19/2013   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LB-20_20141020           | 10/20/2014  | Fluvial | IW92-03   | IW92-03_IW92-03-EBT-14_20131106      | 11/6/2013   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LB-24_20161015           | 10/15/2016  | Fluvial | IW92-03   | IW92-03_IW92-03-EBT-16_20140512      | 5/12/2014   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LS-15_20120423           | 4/23/2012   | Fluvial | IW92-03   | IW92-03_IW92-03-EBT-17_20140812      | 8/12/2014   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LS-17_20130410           | 4/10/2013   | Fluvial | IW92-03   | IW92-03_IW92-03-EBT-18_20141110      | 11/10/2014  |
| Fluvial | DR2-6     | DR2-6_DR2-6-LS-19_20140424           | 4/24/2014   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-11_20130210      | 2/10/2013   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LS-21_20150411           | 4/11/2015   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-12_20130508      | 5/8/2013    |
| Fluvial | DR2-6     | DR2-6_DR2-6-LS-23_20160422           | 4/22/2016   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-13_20130815      | 8/15/2013   |
| Fluvial | DR2-6     | DR2-6_DR2-6-LS-25_20170419           | 4/19/2017   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-14_20131107      | 11/7/2013   |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-11_20130208  | 2/8/2013    | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-15_20140205      | 2/5/2014    |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-12_20130512  | 5/12/2013   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-16_20140513      | 5/13/2014   |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-13_20130815  | 8/15/2013   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-17_20140812      | 8/12/2014   |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-14_20131109  | 11/9/2013   | Fluvial | IW92-07   | IW92-07_IW92-07-EBT-18_20141110      | 11/10/2014  |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-15_20140209  | 2/9/2014    | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-11_20130211      | 2/11/2013   |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-16_20140509  | 5/9/2014    | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-12_20130509      | 5/9/2013    |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-17_20140808  | 8/8/2014    | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-13_20130815      | 8/15/2013   |
| Fluvial | IW101-02A | IW101-02A_IW101-02A-EBT-18_20141106  | 11/6/2014   | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-14_20131106      | 11/6/2013   |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-11_20130208  | 2/8/2013    | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-15_20140210      | 2/10/2014   |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-12_20130512  | 5/12/2013   | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-16_20140512      | 5/12/2014   |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-13_20130815  | 8/15/2013   | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-17_20140811      | 8/11/2014   |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-14_20131109  | 11/9/2013   | Fluvial | IW92-08   | IW92-08_IW92-08-EBT-18_20141110      | 11/10/2014  |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-15_20140208  | 2/8/2014    | Fluvial | MW-100B   | MW-100B_MW100B-LA-22_20151007        | 10/7/2015   |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-16_20140509  | 5/9/2014    | Fluvial | MW-100B   | MW-100B_MW-100B-LB-16_20121019       | 10/19/2012  |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-17_20140808  | 8/8/2014    | Fluvial | MW-100B   | MW-100B_MW100B-LB-20_20141018        | 10/18/2014  |
| Fluvial | IW101-02B | IW101-02B_IW101-02B-EBT-18_20141106  | 11/6/2014   | Fluvial | MW-100B   | MW-100B_MW100B-LB-20-D_20141018      | 10/18/2014  |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-11_20130208  | 2/8/2013    | Fluvial | MW-100B   | MW-100B_MW-100B-LB-24_20161013       | 10/13/2016  |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-12_20130512  | 5/12/2013   | Fluvial | MW-100B   | MW-100B_MW-100B-LS-15_20120421       | 4/21/2012   |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-13_20130815  | 8/15/2013   | Fluvial | MW-100B   | MW-100B_MW-100B-LS-17_20130411       | 4/11/2013   |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-14_20131109  | 11/9/2013   | Fluvial | MW-100B   | MW-100B_MW-100B-LS-19_20140426       | 4/26/2014   |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-15_20140208  | 2/8/2014    | Fluvial | MW-100B   | MW-100B_MW100B-LS-21_20150408        | 4/8/2015    |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-16_20140509  | 5/9/2014    | Fluvial | MW-100B   | MW-100B_MW-100B-LS-23_20160423       | 4/23/2016   |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-17_20140808  | 8/8/2014    | Fluvial | MW-100B   | MW-100B_MW-100B-LS-25_20170420       | 4/20/2017   |
| Fluvial | IW101-02C | IW101-02C_IW101-02C-EBT-18_20141107  | 11/7/2014   | Fluvial | MW-100B   | MW-100B_MW-108B-LA-18_20131012       | 10/12/2013  |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-11_20130207  | 2/7/2013    | Fluvial | MW-101B   | MW-101B_MW-101B-LA-18_20131012       | 10/12/2013  |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-12_20130512  | 5/12/2013   | Fluvial | MW-101B   | MW-101B_MW101B-LA-22_20151007        | 10/7/2015   |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-13_20130816  | 8/16/2013   | Fluvial | MW-101B   | MW-101B_MW-101B-LB-16_20121019       | 10/19/2012  |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-14_20131110  | 11/10/2013  | Fluvial | MW-101B   | MW-101B_MW101B-LB-20_20141020        | 10/20/2014  |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-15_20140209  | 2/9/2014    | Fluvial | MW-101B   | MW-101B_MW101B-LB-24_20161014        | 10/14/2016  |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-16_20140508  | 5/8/2014    | Fluvial | MW-101B   | MW-101B_MW-101B-LS-15_20120423       | 4/23/2012   |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-17_20140808  | 8/8/2014    | Fluvial | MW-101B   | MW-101B_MW-101B-LS-17_20130411       | 4/11/2013   |
| Fluvial | IW101-03A | IW101-03A_IW101-03A-EBT-18_20141107  | 11/7/2014   | Fluvial | MW-101B   | MW-101B_MW-101B-LS-19_20140426       | 4/26/2014   |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-11_20130207  | 2/7/2013    | Fluvial | MW-101B   | MW-101B_MW101B-LS-21_20150408        | 4/8/2015    |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-12_20130512  | 5/12/2013   | Fluvial | MW-101B   | MW-101B_MW-101B-LS-23_20160423       | 4/23/2016   |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-13_20130816  | 8/16/2013   | Fluvial | MW-101B   | MW-101B_MW-101B-LS-25_20170421       | 4/21/2017   |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-14_20131110  | 11/10/2013  | Fluvial | MW-101T   | MW-101T_MW-101T-LA-18_20131012       | 10/12/2013  |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-15_20140209  | 2/9/2014    | Fluvial | MW-101T   | MW-101T_MW101T-LA-22_20151007        | 10/7/2015   |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-16_20140508  | 5/8/2014    | Fluvial | MW-101T   | MW-101T_MW-101T-LB-16_20121019       | 10/19/2012  |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-17_20140809  | 8/9/2014    | Fluvial | MW-101T   | MW-101T_MW101T-LB-20_20141019        | 10/19/2014  |
| Fluvial | IW101-03B | IW101-03B_IW101-03B-EBT-18_20141107  | 11/7/2014   | Fluvial | MW-101T   | MW-101T_MW101T-LB-24_20161014        | 10/14/2016  |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-11_20130208  | 2/8/2013    | Fluvial | MW-101T   | MW-101T_MW-101T-LS-15_20120423       | 4/23/2012   |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-12_20130509  | 5/9/2013    | Fluvial | MW-101T   | MW-101T_MW-101T-LS-17_20130411       | 4/11/2013   |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-13_20130816  | 8/16/2013   | Fluvial | MW-101T   | MW-101T_MW-101T-LS-19_20140426       | 4/26/2014   |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-14_20131110  | 11/10/2013  | Fluvial | MW-101T   | MW-101T_MW101T-LS-21_20150408        | 4/8/2015    |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-15_20140209  | 2/9/2014    | Fluvial | MW-101T   | MW-101T_MW-101T-LS-23_20160423       | 4/23/2016   |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-16_20140509  | 5/9/2014    | Fluvial | MW-101T   | MW-101T_MW-101T-LS-25_20170421       | 4/21/2017   |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-17_20140809  | 8/9/2014    | Fluvial | MW-103    | MW-103_MW-103-LA-18_20131012         | 10/12/2013  |
| Fluvial | IW101-03C | IW101-03C_IW101-03C-EBT-18_20141107  | 11/7/2014   | Fluvial | MW-103    | MW-103_MW103-LA-22_20151007          | 10/7/2015   |
| Fluvial | IW101-04A | IW101-04A_IW101-04A-EBT-11_20130209  | 2/9/2013    | Fluvial | MW-103    | MW-103_MW-103-LB-16_20121021         | 10/21/2012  |
| Fluvial | IW101-04A | IW101-04A_IW101-04A-EBT-12_20130513  | 5/13/2013   | Fluvial | MW-103    | MW-103_MW103-LB-20_20141020          | 10/20/2014  |
| Fluvial | IW101-04A | IW101-04A_IW101-04A-EBT-13_20130818  | 8/18/2013   | Fluvial | MW-103    | MW-103_MW-103-LB-24_20161015         | 10/15/2016  |
| Fluvial | IW101-04A | IW101-04A_IW101-04A-EBT-14_20131110  | 11/10/2013  | Fluvial | MW-104    | MW-104_MW-104-LA-18_20131012         | 10/12/2013  |
| Fluvial | IW101-04A | IW101-04A_IW101-04A-EBT-15_20140208  | 2/8/2014    | Fluvial | MW-104    | MW-104_MW104-LA-22_20151006          | 10/6/2015   |
| Fluvial | IW101-04A | IW101-04A_IW101-04A-EBT-16_20140510  | 5/10/2014   | Fluvial | MW-104    | MW-104_MW-                           |             |

Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well    | Unique Sample ID for Risk Assessment | Sample Date | Aquifer | Well   | Unique Sample ID for Risk Assessment | Sample Date |
|---------|---------|--------------------------------------|-------------|---------|--------|--------------------------------------|-------------|
| Fluvial | MW-113  | MW-113_MW-113-LS-15_20120421         | 4/21/2012   | Fluvial | MW-217 | MW-217_MW-217-LS-15_20120423         | 4/23/2012   |
| Fluvial | MW-113  | MW-113_MW-113-LS-23_20160421         | 4/21/2016   | Fluvial | MW-217 | MW-217_MW-217-LS-17_20130410         | 4/10/2013   |
| Fluvial | MW-113  | MW-113_MW-113-LS-25_20170419         | 4/19/2017   | Fluvial | MW-217 | MW-217_MW-217-LS-19_20140424         | 4/24/2014   |
| Fluvial | MW-142  | MW-142_MW-142-LA-18_20131011         | 10/11/2013  | Fluvial | MW-217 | MW-217_MW-217-LS-21_20150410         | 4/10/2015   |
| Fluvial | MW-142  | MW-142_MW142-LA-22_20151007          | 10/7/2015   | Fluvial | MW-217 | MW-217_MW-217-LS-23_20160421         | 4/21/2016   |
| Fluvial | MW-142  | MW-142_MW-142-LB-16_20121020         | 10/20/2012  | Fluvial | MW-217 | MW-217_MW-217-LS-25_20170419         | 4/19/2017   |
| Fluvial | MW-142  | MW-142_MW142-LB-20_20141019          | 10/19/2014  | Fluvial | MW-218 | MW-218_MW-218-LA-18_20131012         | 10/12/2013  |
| Fluvial | MW-142  | MW-142_MW-142-LB-24_20161013         | 10/13/2016  | Fluvial | MW-218 | MW-218_MW-218-LA-22_20151007         | 10/7/2015   |
| Fluvial | MW-143  | MW-143_MW-143-LA-18_20131012         | 10/12/2013  | Fluvial | MW-218 | MW-218_MW-218-LB-16_20121021         | 10/21/2012  |
| Fluvial | MW-143  | MW-143_MW143-LA-22_20151008          | 10/8/2015   | Fluvial | MW-218 | MW-218_MW-218-LB-20_20141020         | 10/20/2014  |
| Fluvial | MW-143  | MW-143_MW-143-LB-16_20121019         | 10/19/2012  | Fluvial | MW-218 | MW-218_MW-218-LB-24_20161015         | 10/15/2016  |
| Fluvial | MW-143  | MW-143_MW143-LB-20_20141019          | 10/19/2014  | Fluvial | MW-218 | MW-218_MW-218-LS-15_20120423         | 4/23/2012   |
| Fluvial | MW-143  | MW-143_MW-143-LB-24_20161013         | 10/13/2016  | Fluvial | MW-218 | MW-218_MW-218-LS-17_20130410         | 4/10/2013   |
| Fluvial | MW-143  | MW-143_MW-143-LS-15_20120423         | 4/23/2012   | Fluvial | MW-218 | MW-218_MW-218-LS-19_20140425         | 4/25/2014   |
| Fluvial | MW-143  | MW-143_MW-143-LS-17_20130411         | 4/11/2013   | Fluvial | MW-218 | MW-218_MW-218-LS-21_20150410         | 4/10/2015   |
| Fluvial | MW-143  | MW-143_MW-143-LS-19_20140426         | 4/26/2014   | Fluvial | MW-218 | MW-218_MW-218-LS-23_20160421         | 4/21/2016   |
| Fluvial | MW-143  | MW-143_MW143-LS-21_20150408          | 4/8/2015    | Fluvial | MW-218 | MW-218_MW-218-LS-25_20170419         | 4/19/2017   |
| Fluvial | MW-143  | MW-143_MW-143-LS-23_20160423         | 4/23/2016   | Fluvial | MW-219 | MW-219_MW-219-LA-18_20131012         | 10/12/2013  |
| Fluvial | MW-143  | MW-143_MW-143-LS-25_20170421         | 4/21/2017   | Fluvial | MW-219 | MW-219_MW-219-LA-22_20151008         | 10/8/2015   |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-11_20130208      | 2/8/2013    | Fluvial | MW-219 | MW-219_MW-219-LB-16_20121019         | 10/19/2012  |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-12_20130511      | 5/11/2013   | Fluvial | MW-219 | MW-219_MW-219-LB-20_20141019         | 10/19/2014  |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-13_20130819      | 8/19/2013   | Fluvial | MW-219 | MW-219_MW-219-LB-24_20161016         | 10/16/2016  |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-14_20131107      | 11/7/2013   | Fluvial | MW-219 | MW-219_MW-219-LS-15_20120423         | 4/23/2012   |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-15_20140210      | 2/10/2014   | Fluvial | MW-219 | MW-219_MW-219-LS-17_20130411         | 4/11/2013   |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-16_20140510      | 5/10/2014   | Fluvial | MW-219 | MW-219_MW-219-LS-19_20140426         | 4/26/2014   |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-17_20140810      | 8/10/2014   | Fluvial | MW-219 | MW-219_MW-219-LS-21_20150410         | 4/10/2015   |
| Fluvial | MW-197B | MW-197B_MW-197B-EBT-18_20141109      | 11/9/2014   | Fluvial | MW-219 | MW-219_MW-219-LS-23_20160423         | 4/23/2016   |
| Fluvial | MW-197B | MW-197B_MW-197B-LB-16_20121021       | 10/21/2012  | Fluvial | MW-219 | MW-219_MW-219-LS-25_20170422         | 4/22/2017   |
| Fluvial | MW-197B | MW-197B_MW-197B-LB-24_20161014       | 10/14/2016  | Fluvial | MW-22  | MW-22_MW-22-LB-16_20121019           | 10/19/2012  |
| Fluvial | MW-197B | MW-197B_MW-197B-LS-15_20120421       | 4/21/2012   | Fluvial | MW-22  | MW-22_MW22-LB-20_20141018            | 10/18/2014  |
| Fluvial | MW-197B | MW-197B_MW-197B-LS-23_20160425       | 4/25/2016   | Fluvial | MW-22  | MW-22_MW-22-LB-24_20161016           | 10/16/2016  |
| Fluvial | MW-197B | MW-197B_MW-197B-LS-25_20170419       | 4/19/2017   | Fluvial | MW-257 | MW-257_MW-257-LA-18_20131012         | 10/12/2013  |
| Fluvial | MW-198  | MW-198_MW-198-LA-18_20131011         | 10/11/2013  | Fluvial | MW-257 | MW-257_MW-257-LB-16_20121021         | 10/21/2012  |
| Fluvial | MW-198  | MW-198_MW-198-LA-22_20151007         | 10/7/2015   | Fluvial | MW-257 | MW-257_MW-257-LB-20_20141019         | 10/19/2014  |
| Fluvial | MW-198  | MW-198_MW-198-LB-16_20121020         | 10/20/2012  | Fluvial | MW-257 | MW-257_MW-257-LS-15_20120423         | 4/23/2012   |
| Fluvial | MW-198  | MW-198_MW198-LB-20_20141019          | 10/19/2014  | Fluvial | MW-257 | MW-257_MW-257-LS-17_20130411         | 4/11/2013   |
| Fluvial | MW-198  | MW-198_MW-198-LB-24_20161014         | 10/14/2016  | Fluvial | MW-258 | MW-258_MW-258-LA-18_20131012         | 10/12/2013  |
| Fluvial | MW-199B | MW-199B_MW-199B-LA-18_20131011       | 10/11/2013  | Fluvial | MW-258 | MW-258_MW-258-LA-22_20151007         | 10/7/2015   |
| Fluvial | MW-199B | MW-199B_MW-199B-LA-22_20151007       | 10/7/2015   | Fluvial | MW-258 | MW-258_MW-258-LB-16_20121021         | 10/21/2012  |
| Fluvial | MW-199B | MW-199B_MW-199B-LB-16_20121020       | 10/20/2012  | Fluvial | MW-258 | MW-258_MW-258-LB-20_20141021         | 10/21/2014  |
| Fluvial | MW-199B | MW-199B_MW199B-LB-20_20141019        | 10/19/2014  | Fluvial | MW-258 | MW-258_MW-258-LB-24_20161015         | 10/15/2016  |
| Fluvial | MW-199B | MW-199B_MW-199B-LB-24_20161013       | 10/13/2016  | Fluvial | MW-258 | MW-258_MW-258-LS-15_20120422         | 4/22/2012   |
| Fluvial | MW-199B | MW-199B_MW-199B-LS-15_20120423       | 4/23/2012   | Fluvial | MW-258 | MW-258_MW-258-LS-17_20130411         | 4/11/2013   |
| Fluvial | MW-21   | MW-21_MW-21-EBT-17_20140805          | 8/5/2014    | Fluvial | MW-258 | MW-258_MW-258-LS-19_20140425         | 4/25/2014   |
| Fluvial | MW-21   | MW-21_MW-21-EBT-18_20141106          | 11/6/2014   | Fluvial | MW-258 | MW-258_MW-258-LS-21_20150410         | 4/10/2015   |
| Fluvial | MW-21   | MW-21_MW-21-LB-16_20121020           | 10/20/2012  | Fluvial | MW-258 | MW-258_MW-258-LS-23_20160422         | 4/22/2016   |
| Fluvial | MW-21   | MW-21_MW-21-LB-24_20161013           | 10/13/2016  | Fluvial | MW-258 | MW-258_MW-258-LS-25_20170420         | 4/20/2017   |
| Fluvial | MW-21   | MW-21_MW-21-LS-15_20120421           | 4/21/2012   | Fluvial | MW-259 | MW-259_MW-259-LA-18_20131012         | 10/12/2013  |
| Fluvial | MW-21   | MW-21_MW-21-LS-23RE_20160523         | 5/23/2016   | Fluvial | MW-259 | MW-259_MW-259-LA-22_20151007         | 10/7/2015   |
| Fluvial | MW-21   | MW-21_MW-21-LS-25_20170420           | 4/20/2017   | Fluvial | MW-259 | MW-259_MW-259-LB-16_20121021         | 10/21/2012  |
| Fluvial | MW-210B | MW-210B_MW-210B-LA-18_20131011       | 10/11/2013  | Fluvial | MW-259 | MW-259_MW-259-LB-20_20141020         | 10/20/2014  |
| Fluvial | MW-210B | MW-210B_MW-210B-LA-22_20151008       | 10/8/2015   | Fluvial | MW-259 | MW-259_MW-259-LB-24_20161015         | 10/15/2016  |
| Fluvial | MW-210B | MW-210B_MW-210B-LB-16_20121020       | 10/20/2012  | Fluvial | MW-259 | MW-259_MW-259-LS-15_20120422         | 4/22/2012   |
| Fluvial | MW-210B | MW-210B_MW-210B-LB-20_20141020       | 10/20/2014  | Fluvial | MW-259 | MW-259_MW-259-LS-17_20130410         | 4/10/2013   |
| Fluvial | MW-210B | MW-210B_MW-210B-LB-24_20161014       | 10/14/2016  | Fluvial | MW-259 | MW-259_MW-259-LS-19_20140425         | 4/25/2014   |
| Fluvial | MW-210B | MW-210B_MW-210B-LS-15_20120423       | 4/23/2012   | Fluvial | MW-259 | MW-259_MW-259-LS-21_20150410         | 4/10/2015   |
| Fluvial | MW-210B | MW-210B_MW-210B-LS-17_20130410       | 4/10/2013   | Fluvial | MW-259 | MW-259_MW-259-LS-23_20160421         | 4/21/2016   |
| Fluvial | MW-210B | MW-210B_MW-210B-LS-19_20140426       | 4/26/2014   | Fluvial | MW-259 | MW-259_MW-259-LS-25_20170419         | 4/19/2017   |
| Fluvial | MW-210B | MW-210B_MW-210B-LS-21_20150409       | 4/9/2015    | Fluvial | MW-25A | MW-25A_MW-25A-LA-18_20131011         | 10/11/2013  |
| Fluvial | MW-210B | MW-210B_MW-210B-LS-23_20160422       | 4/22/2016   | Fluvial | MW-25A | MW-25A_MW25A-LA-22_20151007          | 10/7/2015   |
| Fluvial | MW-210B | MW-210B_MW-210B-LS-25_20170419       | 4/19/2017   | Fluvial | MW-25A | MW-25A_MW-25A-LB-16_20121019         | 10/19/2012  |
| Fluvial | MW-212  | MW-212_MW-212-EBT-11_20130211        | 2/11/2013   | Fluvial | MW-25A | MW-25A_MW25A-LB-20_20141020          | 10/20/2014  |
| Fluvial | MW-212  | MW-212_MW-212-EBT-12_20130511        | 5/11/2013   | Fluvial | MW-25A | MW-25A_MW-25A-LB-24_20161015         | 10/15/2016  |
| Fluvial | MW-212  | MW-212_MW-212-EBT-13_20130820        | 8/20/2013   | Fluvial | MW-26  | MW-26_MW-26-LA-18_20131012           | 10/12/2013  |
| Fluvial | MW-212  | MW-212_MW-212-EBT-14_20131111        | 11/11/2013  | Fluvial | MW-85  | MW-85_MW-85-EBT-15_20140205          | 2/5/2014    |
| Fluvial | MW-212  | MW-212_MW-212-EBT-15_20140211        | 2/11/2014   | Fluvial | MW-85  | MW-85_MW-85-EBT-16_20140511          | 5/11/2014   |
| Fluvial | MW-212  | MW-212_MW-212-EBT-16_20140510        | 5/10/2014   | Fluvial | MW-85  | MW-85_MW-85-EBT-17_20140810          | 8/10/2014   |
| Fluvial | MW-212  | MW-212_MW-212-EBT-17_20140810        | 8/10/2014   | Fluvial | MW-85  | MW-85_MW-85-EBT-18_20141110          | 11/10/2014  |
| Fluvial | MW-212  | MW-212_MW-212-EBT-18_20141109        | 11/9/2014   | Fluvial | MW-85  | MW-85_MW-85-LB-16_20121019           | 10/19/2012  |
| Fluvial | MW-212  | MW-212_MW-212-LB-16_20121022         | 10/22/2012  | Fluvial | MW-85  | MW-85_MW-85-LB-24_20161015           | 10/15/2016  |
| Fluvial | MW-212  | MW-212_MW-212-LB-24_20161013         | 10/13/2016  | Fluvial | MW-85  | MW-85_MW-85-LS-15_20120421           | 4/21/2012   |
| Fluvial | MW-212  | MW-212_MW-212-LS-15_20120422         | 4/22/2012   | Fluvial | MW-85  | MW-85_MW-85-LS-23_20160421           | 4/21/2016   |
| Fluvial | MW-212  | MW-212_MW-212-LS-23_20160422         | 4/22/2016   | Fluvial | MW-85  | MW-85_MW-85-LS-25_20170419           | 4/19/2017   |
| Fluvial | MW-212  | MW-212_MW-212-LS-25_20170421         | 4/21/2017   | Fluvial | MW-88  | MW-88_MW-88-LA-18_20131012           | 10/12/2013  |
| Fluvial | MW-213  | MW-213_MW-213-EBT-11_20130211        | 2/11/2013   | Fluvial | MW-88  | MW-88_MW88-LA-22_20151006            | 10/6/2015   |
| Fluvial | MW-213  | MW-213_MW-213-EBT-12_20130511        | 5/11/2013   | Fluvial | MW-88  | MW-88_MW-88-LB-16_20121021           | 10/21/2012  |
| Fluvial | MW-213  | MW-213_MW-213-EBT-13_20130820        | 8/20/2013   | Fluvial | MW-88  | MW-88_MW88-LB-20_20141020            | 10/20/2014  |
| Fluvial | MW-213  | MW-213_MW-213-EBT-14_20131111        | 11/11/2013  | Fluvial | MW-88  | MW-88_MW-88-LB-24_20161015           | 10/15/2016  |
| Fluvial | MW-213  | MW-213_MW-213-EBT-15_20140211        | 2/11/2014   | Fluvial | MW-88  | MW-88_MW-88-LS-15_20120423           | 4/23/2012   |
| Fluvial | MW-213  | MW-213_MW-213-EBT-16_20140511        | 5/11/2014   | Fluvial | MW-88  | MW-88_MW-88-LS-17_20130410           | 4/10/2013   |
| Fluvial | MW-213  | MW-213_MW-213-EBT-17_20140810        | 8/10/2014   | Fluvial | MW-88  | MW-88_MW-88-LS-19_20140426           | 4/26/2014   |
| Fluvial | MW-213  | MW-213_MW-213-EBT-18_20141109        | 11/9/2014   | Fluvial | MW-88  | MW-88_MW88-LS-21_20150410            | 4/10/2015   |
| Fluvial | MW-213  | MW-213_MW-213-LB-16_20121022         | 10/22/2012  | Fluvial | MW-88  | MW-88_MW-88-LS-23_20160421           | 4/21/2016   |
| Fluvial | MW-213  | MW-213_MW-213-LB-24_20161017         | 10/17/2016  | Fluvial | MW-88  | MW-88_MW-88-LS-25_20170419           | 4/19/2017   |
| Fluvial | MW-213  | MW-213_MW-213-LS-15_20120421         | 4/21/2012   | Fluvial | MW-92  | MW-92_MW-92-LA-18_20131012           | 10/12/2013  |
| Fluvial | MW-213  | MW-213_MW-213-LS-23_20160424         | 4/24/2016   | Fluvial | MW-92  | MW-92_MW92-LA-22_20151006            | 10/6/2015   |
| Fluvial | MW-213  | MW-213_MW-213-LS-25_20170421         | 4/21/2017   | Fluvial | MW-92  | MW-92_MW-92-LB-16_20121021           | 10/21/2012  |
| Fluvial | MW-215B | MW-215B_MW-215B-LA-18_20131012       | 10/12/2013  | Fluvial | MW-92  | MW-92_MW92-LB-20_20141020            | 10/20/2014  |
| Fluvial | MW-215B | MW-215B_MW-215B-LA-22_20151008       | 10/8/2015   | Fluvial | MW-92  | MW-92_MW-92-LB-24_20161015           | 10/15/2016  |
| Fluvial | MW-215B | MW-215B_MW-215B-LB-16_20121021       | 10/21/2012  | Fluvial | MW-92  | MW-92_MW-92-LS-15_20120423           | 4/23/2012   |
| Fluvial | MW-215B | MW-215B_MW-215B-LB-20_20141021       | 10/21/2014  | Fluvial | MW-92  | MW-92_MW-92-LS-17_20130410           | 4/10/2013   |
| Fluvial | MW-215B | MW-215B_MW-215B-LB-24_20161014       | 10/14/2016  | Fluvial | MW-92  | MW-92_MW-92-LS-19_20140424           | 4/24/2014   |
| Fluvial | MW-216  | MW-216_MW-216A-LA-18_20131011        | 10/11/2013  | Fluvial | MW-92  | MW-92_MW92-LS-21_20150410            | 4/10/2015   |
| Fluvial | MW-216  | MW-216_MW-216-LA-22_20151008         | 10/8/2015   | Fluvial | MW-92  | MW-92_MW-92-LS-23_20160420           | 4/20/2016   |
| Fluvial | MW-216  | MW-216_MW-216-LB-16_20121020         | 10/20/2012  | Fluvial | MW-    |                                      |             |



Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well       | Unique Sample ID for Risk Assessment    | Sample Date |
|---------|------------|-----------------------------------------|-------------|
| Fluvial | MW-94A     | MW-94A_MW-94A-LS-19_20140425            | 4/25/2014   |
| Fluvial | MW-94A     | MW-94A_MW94A-LS-21_20150409             | 4/9/2015    |
| Fluvial | MW-94A     | MW-94A_MW-94A-LS-23_20160421            | 4/21/2016   |
| Fluvial | MW-94A     | MW-94A_MW-94A-LS-25_20170420            | 4/20/2017   |
| Fluvial | MW-96      | MW-96_MW-96-LA-18_20131011              | 10/11/2013  |
| Fluvial | MW-96      | MW-96_MW96-LA-22_20151007               | 10/7/2015   |
| Fluvial | MW-96      | MW-96_MW-96-LB-16_20121019              | 10/19/2012  |
| Fluvial | MW-96      | MW-96_MW96-LB-20_20141020               | 10/20/2014  |
| Fluvial | MW-96      | MW-96_MW96-LB-24_20161015               | 10/15/2016  |
| Fluvial | MW-97      | MW-97_MW-97-LA-18_20131011              | 10/11/2013  |
| Fluvial | MW-97      | MW-97_MW97-LA-22_20151008               | 10/8/2015   |
| Fluvial | MW-97      | MW-97_MW-97-LB-16_20121020              | 10/20/2012  |
| Fluvial | MW-97      | MW-97_MW97-LB-20_20141020               | 10/20/2014  |
| Fluvial | MW-97      | MW-97_MW-97-LB-24_20161014              | 10/14/2016  |
| Fluvial | MW-97      | MW-97_MW-97-LS-15_20120423              | 4/23/2012   |
| Fluvial | MW-97      | MW-97_MW-97-LS-17_20130410              | 4/10/2013   |
| Fluvial | MW-97      | MW-97_MW-97-LS-19_20140425              | 4/25/2014   |
| Fluvial | MW-97      | MW-97_MW97-LS-21_20150409               | 4/9/2015    |
| Fluvial | MW-97      | MW-97_MW-97-LS-23_20160421              | 4/21/2016   |
| Fluvial | MW-97      | MW-97_MW-97-LS-25_20170419              | 4/19/2017   |
| Fluvial | MW-98      | MW-98_MW-98-LA-18_20131011              | 10/11/2013  |
| Fluvial | MW-98      | MW-98_MW98-LA-22_20151008               | 10/8/2015   |
| Fluvial | MW-98      | MW-98_MW-98-LB-16_20121020              | 10/20/2012  |
| Fluvial | MW-98      | MW-98_MW98-LB-20_20141020               | 10/20/2014  |
| Fluvial | MW-98      | MW-98_MW-98-LB-24_20161015              | 10/15/2016  |
| Fluvial | MW-98      | MW-98_MW-98-LS-15_20120423              | 4/23/2012   |
| Fluvial | MW-98      | MW-98_MW-98-LS-17_20130410              | 4/10/2013   |
| Fluvial | MW-98      | MW-98_MW-98-LS-19_20140425              | 4/25/2014   |
| Fluvial | MW-98      | MW-98_MW98-LS-21_20150409               | 4/9/2015    |
| Fluvial | MW-98      | MW-98_MW-98-LS-23_20160422              | 4/22/2016   |
| Fluvial | MW-98      | MW-98_MW-98-LS-25_20170420              | 4/20/2017   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-11_20130206   | 2/6/2013    |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-12_20130513   | 5/13/2013   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-13_20130816   | 8/16/2013   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-14_20131109   | 11/9/2013   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-15_20140208   | 2/8/2014    |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-16_20140509   | 5/9/2014    |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-17_20140808   | 8/8/2014    |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-EBT-18_20141107   | 11/7/2014   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-LB-24_20161014    | 10/14/2016  |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-LS-23_20160423    | 4/23/2016   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-LS-25_20170421    | 4/21/2017   |
| Fluvial | PMW101-02A | PMW101-02A_PMW101-02A-LS-25-RE_20170424 | 4/24/2017   |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-11_20130206   | 2/6/2013    |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-12_20130513   | 5/13/2013   |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-13_20130816   | 8/16/2013   |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-14_20131109   | 11/9/2013   |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-15_20140207   | 2/7/2014    |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-16_20140509   | 5/9/2014    |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-17_20140809   | 8/9/2014    |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-EBT-18_20141108   | 11/8/2014   |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-LB-24_20161014    | 10/14/2016  |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-LS-23_20160423    | 4/23/2016   |
| Fluvial | PMW101-02B | PMW101-02B_PMW101-02B-LS-25_20170421    | 4/21/2017   |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LA-18_20131012    | 10/12/2013  |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LA-22_20151007    | 10/7/2015   |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LB-20_20141018    | 10/18/2014  |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LB-24_20161014    | 10/14/2016  |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LS-17_20130410    | 4/10/2013   |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LS-19_20140426    | 4/26/2014   |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LS-21_20150408    | 4/8/2015    |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LS-23_20160423    | 4/23/2016   |
| Fluvial | PMW101-03A | PMW101-03A_PMW101-03A-LS-25_20170421    | 4/21/2017   |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LA-18_20131012    | 10/12/2013  |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LA-22_20151007    | 10/7/2015   |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LB-20_20141018    | 10/18/2014  |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LB-24_20161014    | 10/14/2016  |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LS-17_20130410    | 4/10/2013   |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LS-19_20140426    | 4/26/2014   |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LS-21_20150408    | 4/8/2015    |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LS-23_20160423    | 4/23/2016   |
| Fluvial | PMW101-03B | PMW101-03B_PMW101-03B-LS-25_20170421    | 4/21/2017   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-11_20130207   | 2/7/2013    |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-12_20130513   | 5/13/2013   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-13_20130815   | 8/15/2013   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-14_20131108   | 11/8/2013   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-15_20140207   | 2/7/2014    |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-16_20140509   | 5/9/2014    |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-17_20140809   | 8/9/2014    |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-EBT-18_20141108   | 11/8/2014   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-LB-16_20121022    | 10/22/2012  |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-LB-24_20161014    | 10/14/2016  |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-LS-15_20120422    | 4/22/2012   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-LS-23_20160423    | 4/23/2016   |
| Fluvial | PMW101-04A | PMW101-04A_PMW101-04A-LS-25_20170421    | 4/21/2017   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-14_20131106       | 11/6/2013   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-15_20140210       | 2/10/2014   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-16_20140512       | 5/12/2014   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-17_20140811       | 8/11/2014   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-EBT-18_20141110       | 11/10/2014  |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-LB-16_20121022        | 10/22/2012  |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-LB-24_20161015        | 10/15/2016  |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-LS-23_20160422        | 4/22/2016   |
| Fluvial | PMW85-05   | PMW85-05_PMW85-05-LS-25_20170419        | 4/19/2017   |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LA-18_20131012        | 10/12/2013  |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LA-22_20151006        | 10/6/2015   |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LB-20_20141020        | 10/20/2014  |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LB-24_20161013        | 10/13/2016  |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LS-17_20130411        | 4/11/2013   |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LS-19_20140424        | 4/24/2014   |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LS-21_20150410        | 4/10/2015   |
| Fluvial | PMW92-02   | PMW92-02_PMW92-02-LS-23_20160421        | 4/21/2016   |

| Aquifer | Well     | Unique Sample ID for Risk Assessment | Sample Date |
|---------|----------|--------------------------------------|-------------|
| Fluvial | PMW92-02 | PMW92-02_PMW92-02-LS-25_20170419     | 4/19/2017   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-11_20130209    | 2/9/2013    |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-12_20130509    | 5/9/2013    |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-13_20130813    | 8/13/2013   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-14_20131106    | 11/6/2013   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-15_20140211    | 2/11/2014   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-16_20140511    | 5/11/2014   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-17_20140811    | 8/11/2014   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-EBT-18_20141109    | 11/9/2014   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-LB-16_20121022     | 10/22/2012  |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-LB-24_20161013     | 10/13/2016  |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-LS-15_20120421     | 4/21/2012   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-LS-23_20160422     | 4/22/2016   |
| Fluvial | PMW92-03 | PMW92-03_PMW92-03-LS-25_20170419     | 4/19/2017   |
| Fluvial | PMW92-06 | PMW92-06_PMW92-06-LS-15_20120421     | 4/21/2012   |
| I/UC    | MW-203A  | MW-203A_MW-203A-LS-25_20170419       | 4/19/2017   |
| I/UC    | MW-205A  | MW-205A_MW-205A-LA-18_20131011       | 10/11/2013  |
| I/UC    | MW-205A  | MW-205A_MW-205A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-205A  | MW-205A_MW-205A-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-205A  | MW-205A_MW-205A-LB-20_20141020       | 10/20/2014  |
| I/UC    | MW-205A  | MW-205A_MW-205A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-205A  | MW-205A_MW-205A-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-205A  | MW-205A_MW-205A-LS-17_20130410       | 4/10/2013   |
| I/UC    | MW-205A  | MW-205A_MW-205A-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-205A  | MW-205A_MW-205A-LS-21_20150409       | 4/9/2015    |
| I/UC    | MW-205A  | MW-205A_MW-205A-LS-23_20160422       | 4/22/2016   |
| I/UC    | MW-205A  | MW-205A_MW-205A-LS-25_20170420       | 4/20/2017   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LA-18_20131012       | 10/12/2013  |
| I/UC    | MW-207A  | MW-207A_MW-207A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-207A  | MW-207A_MW-207A-LB-20_20141020       | 10/20/2014  |
| I/UC    | MW-207A  | MW-207A_MW-207A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-207A  | MW-207A_MW-207A-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LS-17_20130411       | 4/11/2013   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LS-21_20150410       | 4/10/2015   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LS-23_20160422       | 4/22/2016   |
| I/UC    | MW-207A  | MW-207A_MW-207A-LS-25_20170420       | 4/20/2017   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-208A  | MW-208A_MW-208A-LB-20_20141020       | 10/20/2014  |
| I/UC    | MW-208A  | MW-208A_MW-208A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-208A  | MW-208A_MW-208A-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LS-17_20130410       | 4/10/2013   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LS-21_20150410       | 4/10/2015   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LS-23_20160421       | 4/21/2016   |
| I/UC    | MW-208A  | MW-208A_MW-208A-LS-25_20170420       | 4/20/2017   |
| I/UC    | MW-209A  | MW-209A_MW-209A-LA-18_20131011       | 10/11/2013  |
| I/UC    | MW-209A  | MW-209A_MW-209A-LA-22_20151007       | 10/7/2015   |
| I/UC    | MW-209A  | MW-209A_MW-209A-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-209A  | MW-209A_MW209A-LB-20_20141019        | 10/19/2014  |
| I/UC    | MW-209A  | MW-209A_MW-209A-LB-24_20161013       | 10/13/2016  |
| I/UC    | MW-209A  | MW-209A_MW-209A-LS-21_20150409       | 4/9/2015    |
| I/UC    | MW-209A  | MW-209A_MW-209A-LS-23_20160422       | 4/22/2016   |
| I/UC    | MW-209A  | MW-209A_MW-209A-LS-25_20170422       | 4/22/2017   |
| I/UC    | MW-210A  | MW-210A_MW-210A-LA-18_20131011       | 10/11/2013  |
| I/UC    | MW-210A  | MW-210A_MW-210A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-210A  | MW-210A_MW-210A-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-210A  | MW-210A_MW-210A-LB-20_20141020       | 10/20/2014  |
| I/UC    | MW-210A  | MW-210A_MW-210A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-210A  | MW-210A_MW-210A-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-210A  | MW-210A_MW-210A-LS-17_20130410       | 4/10/2013   |
| I/UC    | MW-210A  | MW-210A_MW-210A-LS-19_20140426       | 4/26/2014   |
| I/UC    | MW-210A  | MW-210A_MW-210A-LS-21_20150409       | 4/9/2015    |
| I/UC    | MW-210A  | MW-210A_MW-210A-LS-23_20160422       | 4/22/2016   |
| I/UC    | MW-210A  | MW-210A_MW-210A-LS-25_20170419       | 4/19/2017   |
| I/UC    | MW-211   | MW-211_MW-211-LA-18_20131012         | 10/12/2013  |
| I/UC    | MW-211   | MW-211_MW-211-LA-22_20151008         | 10/8/2015   |
| I/UC    | MW-211   | MW-211_MW-211-LB-16_20121021         | 10/21/2012  |
| I/UC    | MW-211   | MW-211_MW-211-LB-20_20141020         | 10/20/2014  |
| I/UC    | MW-211   | MW-211_MW-211-LB-24_20161014         | 10/14/2016  |
| I/UC    | MW-214A  | MW-214A_MW-214A-LA-18_20131012       | 10/12/2013  |
| I/UC    | MW-214A  | MW-214A_MW-214A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-214A  | MW-214A_MW-214A-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-214A  | MW-214A_MW-214A-LB-20_20141021       | 10/21/2014  |
| I/UC    | MW-214A  | MW-214A_MW-214A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-214A  | MW-214A_MW-214A-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-214A  | MW-214A_MW-214A-LS-17_20130411       | 4/11/2013   |
| I/UC    | MW-214A  | MW-214A_MW-214A-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-214B  | MW-214B_MW-214B-LA-18_20131012       | 10/12/2013  |
| I/UC    | MW-214B  | MW-214B_MW-214B-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-214B  | MW-214B_MW-214B-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-214B  | MW-214B_MW-214B-LB-20_20141021       | 10/21/2014  |
| I/UC    | MW-214B  | MW-214B_MW-214B-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-214B  | MW-214B_MW-214B-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-214B  | MW-214B_MW-214B-LS-17_20130411       | 4/11/2013   |
| I/UC    | MW-214B  | MW-214B_MW-214B-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-215A  | MW-215A_MW-215A-LA-18_20131012       | 10/12/2013  |
| I/UC    | MW-215A  | MW-215A_MW-215A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-215A  | MW-215A_MW-215A-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-215A  | MW-215A_MW-215A-LB-20_20141021       | 10/21/2014  |
| I/UC    | MW-215A  | MW-215A_MW-215A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-252   | MW-252_MW-252-LA-18_20131012         | 10/12/2013  |
| I/UC    | MW-252   | MW-252_MW-252-LA-22_20151008         | 10/8/2015   |
| I/UC    | MW-252   | MW-252_MW-252-LB-16_20121019         | 10/19/2012  |
| I/UC    | MW-252   | MW-252_MW252-LB-20_20141019          | 10/19/2014  |
| I/UC    | MW-252   | MW-252_MW-252-LB-24_20161013         | 10/13/2016  |
| I/UC    | MW-252   | MW-252_MW-252-LS-15_20120423         | 4/23/2012   |
| I/UC    | MW-252   | MW-252_MW-252-LS-17_20130411         | 4/11/2013   |
| I/UC    | MW-253   | MW-253_MW-253-LA-18_20131012         | 10/12/2013  |
| I/UC    | MW-253   | MW-253_MW-253-LB-16_20121019         | 10/19/2012  |

Table 3-2  
Groundwater Samples Used in the Assessment  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee

| Aquifer | Well    | Unique Sample ID for Risk Assessment | Sample Date |
|---------|---------|--------------------------------------|-------------|
| I/UC    | MW-253  | MW-253_MW253-LB-20_20141019          | 10/19/2014  |
| I/UC    | MW-253  | MW-253_MW-253-LB-24_20161013         | 10/13/2016  |
| I/UC    | MW-253  | MW-253_MW-253-LS-15_20120423         | 4/23/2012   |
| I/UC    | MW-253  | MW-253_MW-253-LS-17_20130411         | 4/11/2013   |
| I/UC    | MW-256  | MW-256_MW-256-LA-18_20131012         | 10/12/2013  |
| I/UC    | MW-256  | MW-256_MW-256-LA-22_20151007         | 10/7/2015   |
| I/UC    | MW-256  | MW-256_MW-256-LB-16_20121019         | 10/19/2012  |
| I/UC    | MW-256  | MW-256_MW-256-LB-20_20141019         | 10/19/2014  |
| I/UC    | MW-256  | MW-256_MW-256-LB-24_20161013         | 10/13/2016  |
| I/UC    | MW-256  | MW-256_MW-256-LS-15_20120423         | 4/23/2012   |
| I/UC    | MW-256  | MW-256_MW-256-LS-17_20130411         | 4/11/2013   |
| I/UC    | MW-256  | MW-256_MW-256-LS-19_20140426         | 4/26/2014   |
| I/UC    | MW-256  | MW-256_MW-256-LS-21_20150408         | 4/8/2015    |
| I/UC    | MW-256  | MW-256_MW-256-LS-23_20160423         | 4/23/2016   |
| I/UC    | MW-256  | MW-256_MW-256-LS-25_20170421         | 4/21/2017   |
| I/UC    | MW-262  | MW-262_MW-262_20150730               | 7/30/2015   |
| I/UC    | MW-262  | MW-262_MW-262-LA-22_20151007         | 10/7/2015   |
| I/UC    | MW-262  | MW-262_MW-262-LB-24_20161013         | 10/13/2016  |
| I/UC    | MW-262  | MW-262_MW-262-LS-23_20160423         | 4/23/2016   |
| I/UC    | MW-262  | MW-262_MW-262-LS-25_20170421         | 4/21/2017   |
| I/UC    | MW-264  | MW-264_MW-264-LA-22_20151007         | 10/7/2015   |
| I/UC    | MW-264  | MW-264_MW-264-LB-24_20161015         | 10/15/2016  |
| I/UC    | MW-264  | MW-264_MW-264-LS-23_20160422         | 4/22/2016   |
| I/UC    | MW-264  | MW-264_MW-264-LS-25_20170420         | 4/20/2017   |
| I/UC    | MW-264  | MW-264_MW-264-SRIPhase1_20150517     | 5/17/2015   |
| I/UC    | MW-268  | MW-268_MW-268-LA-22_20151007         | 10/7/2015   |
| I/UC    | MW-268  | MW-268_MW-268-LB-24_20161015         | 10/15/2016  |
| I/UC    | MW-268  | MW-268_MW-268-LS-23_20160421         | 4/21/2016   |
| I/UC    | MW-268  | MW-268_MW-268-LS-25_20170419         | 4/19/2017   |
| I/UC    | MW-268  | MW-268_MW-268-SRIPhase1_20150517     | 5/17/2015   |
| I/UC    | MW-273  | MW-273_MW-273_20150731               | 7/31/2015   |
| I/UC    | MW-273  | MW-273_MW-273-LA-22_20151008         | 10/8/2015   |
| I/UC    | MW-273  | MW-273_MW-273-LB-24_20161015         | 10/15/2016  |
| I/UC    | MW-273  | MW-273_MW-273-LS-23_20160423         | 4/23/2016   |
| I/UC    | MW-273  | MW-273_MW-273-LS-25_20170422         | 4/22/2017   |
| I/UC    | MW-38   | MW-38_MW-38-LB-16_20121021           | 10/21/2012  |
| I/UC    | MW-107B | MW-107B_MW-107B-LA-18_20131012       | 10/12/2013  |
| I/UC    | MW-107B | MW-107B_MW107B-LA-22_20151008        | 10/8/2015   |
| I/UC    | MW-107B | MW-107B_MW-107B-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-107B | MW-107B_MW107B-LB-20_20141020        | 10/20/2014  |
| I/UC    | MW-107B | MW-107B_MW107B-LB-24_20161014        | 10/14/2016  |
| I/UC    | MW-107B | MW-107B_MW-107B-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-107B | MW-107B_MW-107B-LS-17_20130411       | 4/11/2013   |
| I/UC    | MW-107B | MW-107B_MW-107B-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-107B | MW-107B_MW107B-LS-21_20150410        | 4/10/2015   |
| I/UC    | MW-107B | MW-107B_MW-107B-LS-23_20160422       | 4/22/2016   |
| I/UC    | MW-107B | MW-107B_MW-107B-LS-25_20170420       | 4/20/2017   |
| I/UC    | MW-107T | MW-107T_MW-107T-LA-18_20131012       | 10/12/2013  |
| I/UC    | MW-107T | MW-107T_MW107T-LA-22_20151008        | 10/8/2015   |
| I/UC    | MW-107T | MW-107T_MW-107T-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-107T | MW-107T_MW107T-LB-20_20141020        | 10/20/2014  |
| I/UC    | MW-107T | MW-107T_MW107T-LB-24_20161014        | 10/14/2016  |
| I/UC    | MW-107T | MW-107T_MW-107T-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-107T | MW-107T_MW-107T-LS-17_20130411       | 4/11/2013   |
| I/UC    | MW-107T | MW-107T_MW-107T-LS-19_20140425       | 4/25/2014   |
| I/UC    | MW-107T | MW-107T_MW107T-LS-21_20150410        | 4/10/2015   |
| I/UC    | MW-107T | MW-107T_MW-107T-LS-23_20160422       | 4/22/2016   |
| I/UC    | MW-107T | MW-107T_MW-107T-LS-25_20170420       | 4/20/2017   |
| I/UC    | MW-108  | MW-108_MW-108-LA-18_20131012         | 10/12/2013  |
| I/UC    | MW-108  | MW-108_MW108-LA-22_20151008          | 10/8/2015   |
| I/UC    | MW-108  | MW-108_MW-108-LB-16_20121021         | 10/21/2012  |
| I/UC    | MW-108  | MW-108_MW108-LB-20_20141020          | 10/20/2014  |
| I/UC    | MW-108  | MW-108_MW108-LB-24_20161014          | 10/14/2016  |
| I/UC    | MW-108  | MW-108_MW-108-LS-15_20120423         | 4/23/2012   |
| I/UC    | MW-108  | MW-108_MW-108-LS-17_20130411         | 4/11/2013   |
| I/UC    | MW-108  | MW-108_MW-108-LS-19_20140425         | 4/25/2014   |
| I/UC    | MW-108  | MW-108_MW108-LS-21_20150409          | 4/9/2015    |
| I/UC    | MW-108  | MW-108_MW-108-LS-23_20160422         | 4/22/2016   |
| I/UC    | MW-108  | MW-108_MW-108-LS-25_20170420         | 4/20/2017   |
| I/UC    | MW-141  | MW-141_MW-141-LA-18_20131011         | 10/11/2013  |
| I/UC    | MW-141  | MW-141_MW141-LA-22_20151007          | 10/7/2015   |
| I/UC    | MW-141  | MW-141_MW-141-LB-16_20121020         | 10/20/2012  |
| I/UC    | MW-141  | MW-141_MW141-LB-20_20141019          | 10/19/2014  |
| I/UC    | MW-141  | MW-141_MW-141-LB-24_20161013         | 10/13/2016  |
| I/UC    | MW-141  | MW-141_MW-141-LS-15_20120423         | 4/23/2012   |
| I/UC    | MW-141  | MW-141_MW-141-LS-17_20130410         | 4/10/2013   |
| I/UC    | MW-141  | MW-141_MW-141-LS-19_20140426         | 4/26/2014   |
| I/UC    | MW-141  | MW-141_MW-141-LS-21_20150409         | 4/9/2015    |
| I/UC    | MW-141  | MW-141_MW-141-LS-23_20160423         | 4/23/2016   |
| I/UC    | MW-141  | MW-141_MW-141-LS-25_20170421         | 4/21/2017   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-11_20130208      | 2/8/2013    |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-12_20130511      | 5/11/2013   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-13_20130819      | 8/19/2013   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-14_20131107      | 11/7/2013   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-15_20140210      | 2/10/2014   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-16_20140510      | 5/10/2014   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-17_20140810      | 8/10/2014   |
| I/UC    | MW-197A | MW-197A_MW-197A-EBT-18_20141109      | 11/9/2014   |
| I/UC    | MW-197A | MW-197A_MW-197A-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-197A | MW-197A_MW-197A-LB-24_20161014       | 10/14/2016  |
| I/UC    | MW-197A | MW-197A_MW-197A-LS-15_20120420       | 4/20/2012   |
| I/UC    | MW-197A | MW-197A_MW-197A-LS-23_20160425       | 4/25/2016   |
| I/UC    | MW-197A | MW-197A_MW-197A-LS-25_20170419       | 4/19/2017   |
| I/UC    | MW-199A | MW-199A_MW-199A-LA-18_20131011       | 10/11/2013  |
| I/UC    | MW-199A | MW-199A_MW-199A-LA-22_20151007       | 10/7/2015   |
| I/UC    | MW-199A | MW-199A_MW-199A-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-199A | MW-199A_MW199A-LB-20_20141019        | 10/19/2014  |
| I/UC    | MW-199A | MW-199A_MW-199A-LB-24_20161013       | 10/13/2016  |
| I/UC    | MW-202A | MW-202A_MW-202A-LA-18_20131011       | 10/11/2013  |
| I/UC    | MW-202A | MW-202A_MW-202A-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-202A | MW-202A_MW-202A-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-202A | MW-202A_MW202A-LB-20_20141019        | 10/19/2014  |

| Aquifer | Well    | Unique Sample ID for Risk Assessment | Sample Date |
|---------|---------|--------------------------------------|-------------|
| I/UC    | MW-202A | MW-202A_MW-202A-LB-24_20161013       | 10/13/2016  |
| I/UC    | MW-202A | MW-202A_MW-202A-LS-25_20170421       | 4/21/2017   |
| I/UC    | MW-202B | MW-202B_MW-202B-LA-18_20131011       | 10/11/2013  |
| I/UC    | MW-202B | MW-202B_MW-202B-LA-22_20151008       | 10/8/2015   |
| I/UC    | MW-202B | MW-202B_MW-202B-LB-16_20121020       | 10/20/2012  |
| I/UC    | MW-202B | MW-202B_MW202B-LB-20_20141019        | 10/19/2014  |
| I/UC    | MW-202B | MW-202B_MW-202B-LB-24_20161013       | 10/13/2016  |
| I/UC    | MW-202B | MW-202B_MW-202B-LS-15_20120423       | 4/23/2012   |
| I/UC    | MW-202B | MW-202B_MW-202B-LS-17_20130411       | 4/11/2013   |
| I/UC    | MW-202B | MW-202B_MW-202B-LS-19_20140426       | 4/26/2014   |
| I/UC    | MW-202B | MW-202B_MW-202B-LS-21_20150408       | 4/8/2015    |
| I/UC    | MW-202B | MW-202B_MW-202B-LS-23_20160423       | 4/23/2016   |
| I/UC    | MW-202B | MW-202B_MW-202B-LS-25_20170421       | 4/21/2017   |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-11_20130208      | 2/8/2013    |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-12_20130509      | 5/9/2013    |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-13_20130819      | 8/19/2013   |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-14_20131107      | 11/7/2013   |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-15_20140210      | 2/10/2014   |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-16_20140510      | 5/10/2014   |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-17_20140810      | 8/10/2014   |
| I/UC    | MW-203A | MW-203A_MW-203A-EBT-18_20141109      | 11/9/2014   |
| I/UC    | MW-203A | MW-203A_MW-203A-LB-16_20121021       | 10/21/2012  |
| I/UC    | MW-203A | MW-203A_MW-203A-LB-24_20161016       | 10/16/2016  |
| I/UC    | MW-203A | MW-203A_MW-203A-LS-15_20120420       | 4/20/2012   |
| I/UC    | MW-203A | MW-203A_MW-203A-LS-23_20160425       | 4/25/2016   |
| I/UC    | MW-38   | MW-38_MW38-LB-20_20141021            | 10/21/2014  |
| I/UC    | MW-38   | MW-38_MW-38-LB-24_20161014           | 10/14/2016  |
| I/UC    | MW-39A  | MW-39A_MW-39A-LA-18_20131011         | 10/11/2013  |
| I/UC    | MW-39A  | MW-39A_MW39A-LA-22_20151008          | 10/8/2015   |
| I/UC    | MW-39A  | MW-39A_MW-39A-LB-16_20121020         | 10/20/2012  |
| I/UC    | MW-39A  | MW-39A_MW39A-LB-20_20141019          | 10/19/2014  |
| I/UC    | MW-39A  | MW-39A_MW-39A-LB-24_20161014         | 10/14/2016  |
| I/UC    | MW-39A  | MW-39A_MW-39A-LS-15_20120423         | 4/23/2012   |
| I/UC    | MW-39A  | MW-39A_MW-39A-LS-17_20130410         | 4/10/2013   |
| I/UC    | MW-39A  | MW-39A_MW-39A-LS-19_20140425         | 4/25/2014   |
| I/UC    | MW-39A  | MW-39A_MW-39A-LS-21_20150409         | 4/9/2015    |
| I/UC    | MW-39A  | MW-39A_MW-39A-LS-23_20160422         | 4/22/2016   |
| I/UC    | MW-39A  | MW-39A_MW-39A-LS-25_20170420         | 4/20/2017   |
| I/UC    | MW-89   | MW-89_MW-89-LA-18_20131011           | 10/11/2013  |
| I/UC    | MW-89   | MW-89_MW89-LA-22_20151007            | 10/7/2015   |
| I/UC    | MW-89   | MW-89_MW-89-LB-16_20121020           | 10/20/2012  |
| I/UC    | MW-89   | MW-89_MW89-LB-20_20141019            | 10/19/2014  |
| I/UC    | MW-89   | MW-89_MW-89-LB-24_20161013           | 10/13/2016  |
| I/UC    | MW-89   | MW-89_MW89-LS-25_20170421            | 4/21/2017   |
| I/UC    | MW-90   | MW-90_MW-90-LA-18_20131011           | 10/11/2013  |
| I/UC    | MW-90   | MW-90_MW90-LA-22_20151007            | 10/7/2015   |
| I/UC    | MW-90   | MW-90_MW-90-LB-16_20121020           | 10/20/2012  |
| I/UC    | MW-90   | MW-90_MW90-LB-20_20141019            | 10/19/2014  |
| I/UC    | MW-90   | MW-90_MW-90-LB-24_20161013           | 10/13/2016  |
| I/UC    | MW-90   | MW-90_MW-90-LS-15_20120423           | 4/23/2012   |
| I/UC    | MW-90   | MW-90_MW-90-LS-17_20130410           | 4/10/2013   |
| I/UC    | MW-90   | MW-90_MW-90-LS-19_20140426           | 4/26/2014   |
| I/UC    | MW-90   | MW-90_MW90-LS-21_20150409            | 4/9/2015    |
| I/UC    | MW-90   | MW-90_MW-90-LS-23_20160422           | 4/22/2016   |
| I/UC    | MW-90   | MW-90_MW-90-LS-25_20170421           | 4/21/2017   |
| Memphis | MW-140  | MW-140_MW-140-LA-18_20131011         | 10/11/2013  |
| Memphis | MW-140  | MW-140_MW140-LA-22_20151007          | 10/7/2015   |
| Memphis | MW-140  | MW-140_MW-140-LB-16_20121020         | 10/20/2012  |
| Memphis | MW-140  | MW-140_MW140-LB-20_20141019          | 10/19/2014  |
| Memphis | MW-140  | MW-140_MW-140-LB-24_20161013         | 10/13/2016  |
| Memphis | MW-140  | MW-140_MW-140-LS-25_20170421         | 4/21/2017   |
| Memphis | MW-254  | MW-254_MW-254-LA-18_20131012         | 10/12/2013  |
| Memphis | MW-254  | MW-254_MW-254-LA-22_20151007         | 10/7/2015   |
| Memphis | MW-254  | MW-254_MW-254-LB-16_20121019         | 10/19/2012  |
| Memphis | MW-254  | MW-254_MW254-LB-20_20141019          | 10/19/2014  |
| Memphis | MW-254  | MW-254_MW-254-LB-24_20161013         | 10/13/2016  |
| Memphis | MW-254  | MW-254_MW-254-LS-15_20120423         | 4/23/2012   |
| Memphis | MW-254  | MW-254_MW-254-LS-17_20130411         | 4/11/2013   |
| Memphis | MW-254  | MW-254_MW-254-LS-19_20140426         | 4/26/2014   |
| Memphis | MW-255  | MW-255_MW-255-LA-18_20131012         | 10/12/2013  |
| Memphis | MW-255  | MW-255_MW-255-LA-22_20151007         | 10/7/2015   |
| Memphis | MW-255  | MW-255_MW-255-LB-16_20121019         | 10/19/2012  |
| Memphis | MW-255  | MW-255_MW-255-LB-20_20141019         | 10/19/2014  |
| Memphis | MW-255  | MW-255_MW-255-LB-24_20161013         | 10/13/2016  |
| Memphis | MW-255  | MW-255_MW-255-LS-15_20120423         | 4/23/2012   |
| Memphis | MW-255  | MW-255_MW-255-LS-17_20130411         | 4/11/2013   |



Figures





## **FIGURES TABLE OF CONTENTS:**

|                   |                                                      |
|-------------------|------------------------------------------------------|
| <b>Figure 1-1</b> | <b>Unit Boundaries</b>                               |
| <b>Figure 2-1</b> | <b>Site Location Map</b>                             |
| <b>Figure 2-2</b> | <b>Groundwater Elevations in the Fluvial Aquifer</b> |
| <b>Figure 2-3</b> | <b>Groundwater Elevations in the IAQ</b>             |
| <b>Figure 2-4</b> | <b>Groundwater Elevations in the MAQ</b>             |
| <b>Figure 3-1</b> | <b>Monitoring Well Locations</b>                     |
| <b>Figure 4-1</b> | <b>Human Health Conceptual Site Model</b>            |
| <b>Figure 4-2</b> | <b>Response Actions</b>                              |

## Unit Boundaries

Main Installation  
Defense Depot  
Memphis, Tennessee

Operable Units (OU-#)

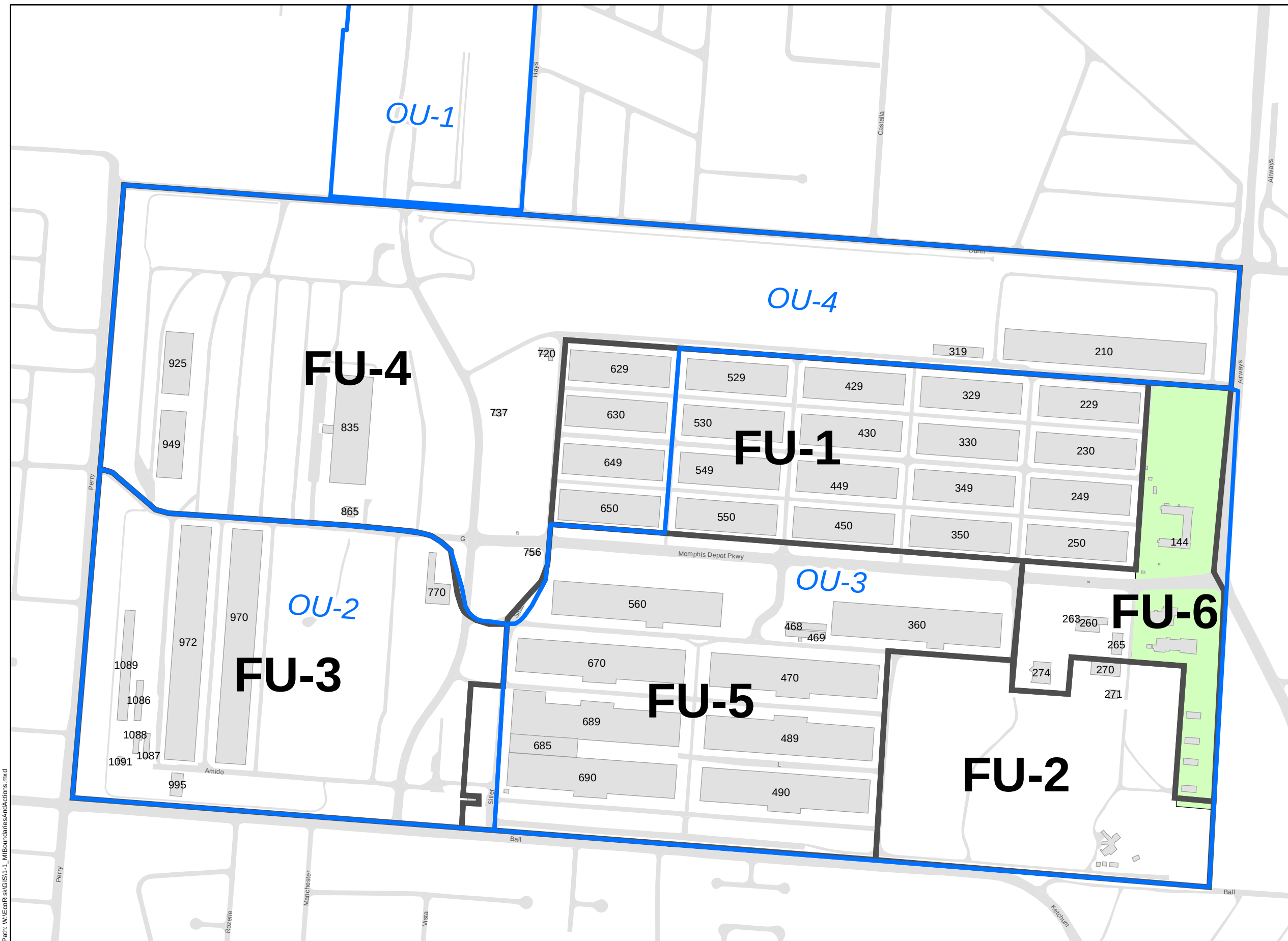
-  Functional Unit Boundary (FU-#)  
 Area Available for Unrestricted Use  
 Buildings 490 - DDMT Assigned Number  
 Roads



A horizontal number line is shown with tick marks at 0, 500, and 1,000. The word "Feet" is written below the line. A white rectangular segment is highlighted between the 250 and 500 marks, representing the distance from the end of the first segment to the end of the second segment.

Projection: NAD 1927 StatePlane Tennessee  
Units: Feet, Elevation Units: Feet, NAVD88

**Date:** 11/16/2017  
**Edition:** Rev 0





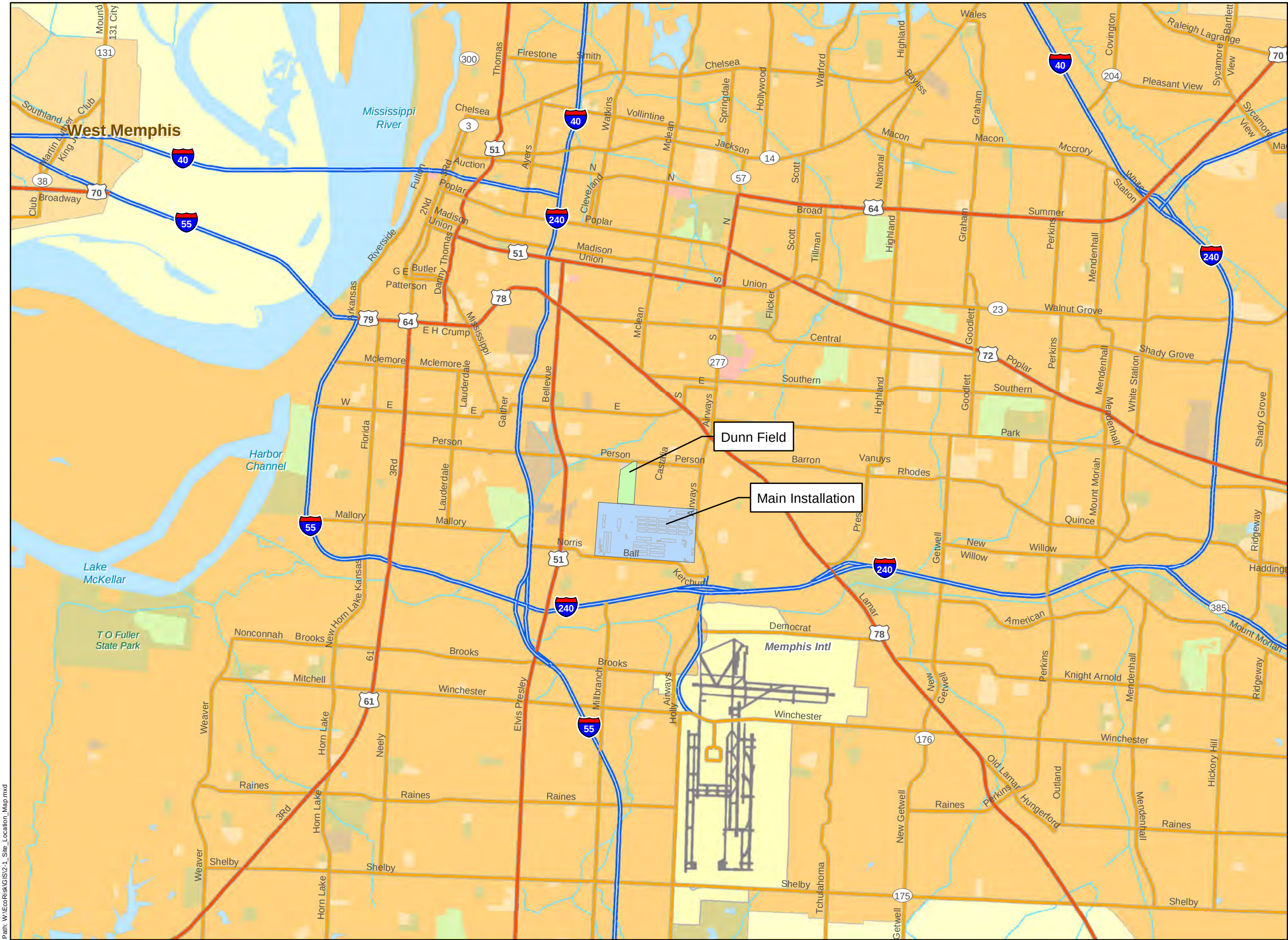


Figure 2-1

Site Location Map

Human Health and  
Ecological Risk Assessment

Main Installation  
Defense Depot  
Memphis, Tennessee



0 1 2  
Miles

Projection: NAD 1927 StatePlane Tennessee  
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/16/2017  
Edition: Rev 0





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Path: W:\EOR\Risk\GIS2-3\_ILUC\_GW\Map17.mxd



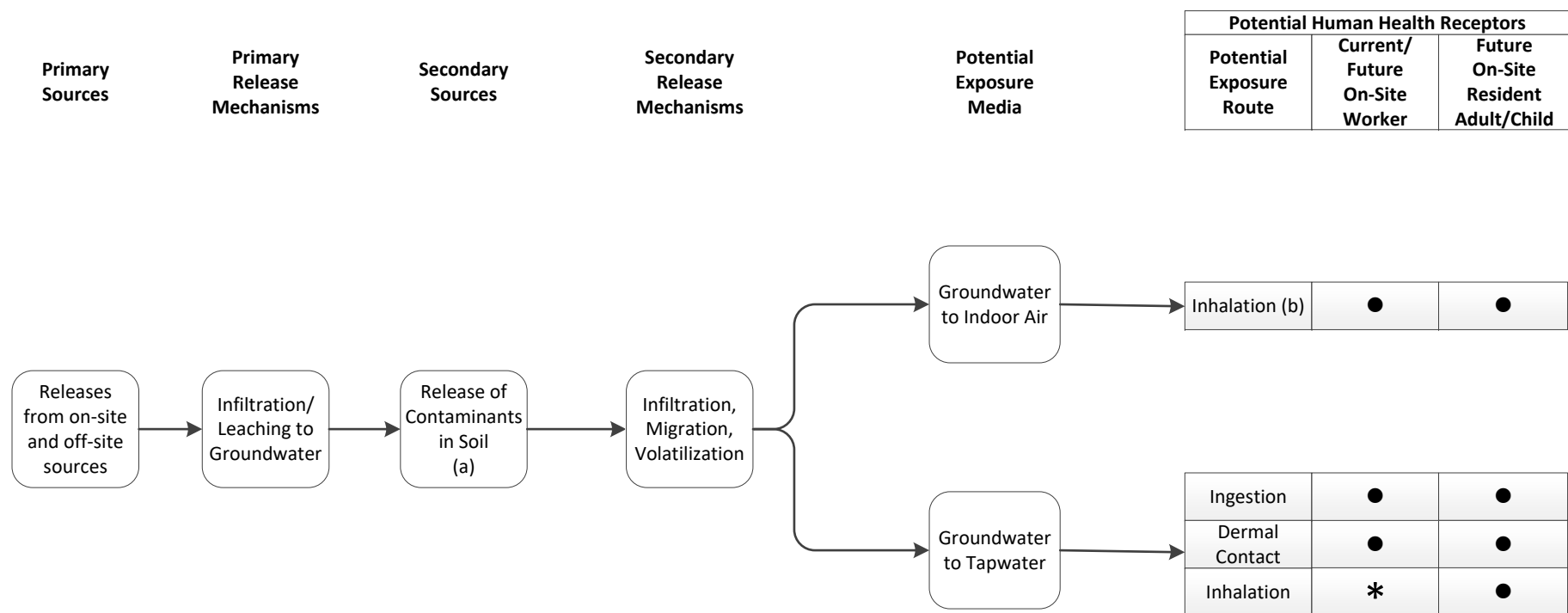


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NOTES

- Pathway assumed to be complete.
- \* Pathway assumed to be potentially insignificant.
- (a) Only groundwater exposures are evaluated in this HHRA update.
- (b) Assessed via EPA Vapor Intrusion Screening Level calculator.

Figure 4-1  
Human Health Conceptual Site Model  
Human Health and Ecological Risk Assessment  
Main Installation – Defense Depot Memphis, Tennessee



Figure 4-2

Response Actions

Human Health and  
Ecological Risk Assessment

Main Installation  
Defense Depot  
Memphis, Tennessee

Legend

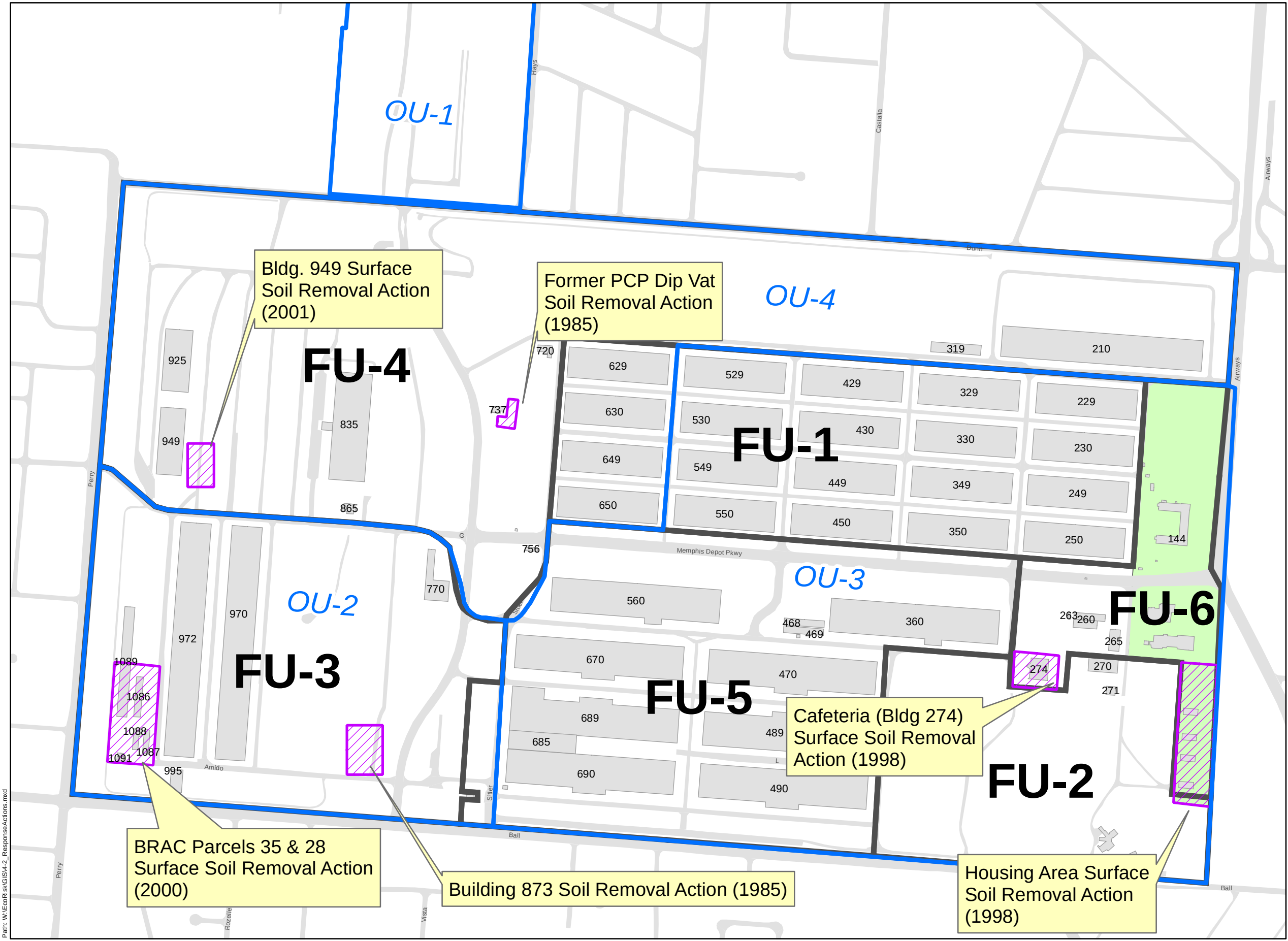
- Operable Units (OU-#)
- Past Response Actions
- Functional Unit Boundary (FU-#)
- Area Available for Unrestricted Use
- Buildings 490 - DDMT Assigned Number
- Roads

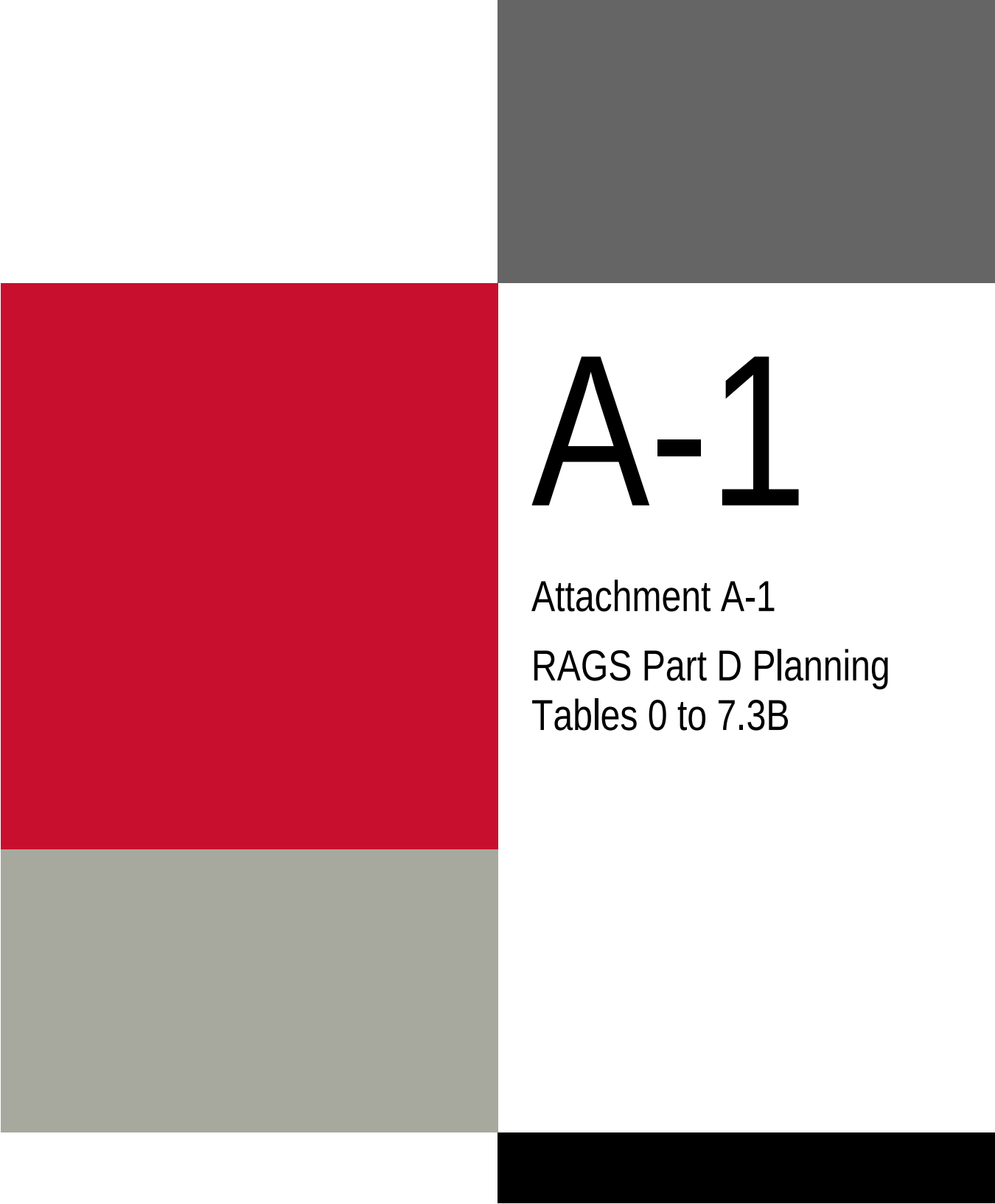


0 500 1,000  
Feet

Projection: NAD 1927 StatePlane Tennessee  
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/16/2017  
Edition: Rev 0





# A-1

Attachment A-1

RAGS Part D Planning  
Tables 0 to 7.3B

## **ATTACHMENT A-1 TABLE OF CONTENTS:**

|                        |                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Table 0</b>         | <b>Site Risk Assessment Identification Information</b>                                                |
| <b>Table 1</b>         | <b>Selection of Exposure Pathways</b>                                                                 |
| <b>Table 2.1</b>       | <b>Occurrence, Distribution, and Selection of Human Health COPCs for Site-wide Groundwater</b>        |
| <b>Table 2.Supp.1</b>  | <b>Summary of Human Health COPCs</b>                                                                  |
| <b>Table 3.1</b>       | <b>Exposure Point Concentration Summary for Groundwater – Fluvial Aquifer</b>                         |
| <b>Table 3.2</b>       | <b>Exposure Point Concentration Summary for Groundwater – Intermediate Aquifer</b>                    |
| <b>Table 3.3</b>       | <b>Exposure Point Concentration Summary for Groundwater – Memphis Aquifer</b>                         |
| <b>Table 4.1</b>       | <b>Values used for Daily Intake Calculations for Groundwater</b>                                      |
| <b>Table 4.Supp.1</b>  | <b>Calculation of Age-Adjusted Exposure Factors for a Resident</b>                                    |
| <b>Table 4.Supp.2</b>  | <b>Calculation of Age-Adjusted Exposure Factors for COPCs Mutagenic Mode of Action for a Resident</b> |
| <b>Table 4.Supp.3A</b> | <b>Calculation of DA-Event for Dermal Exposure to Groundwater – Fluvial Aquifer</b>                   |
| <b>Table 4.Supp.3B</b> | <b>Calculation of DA-Event for Dermal Exposure to Groundwater – Intermediate Aquifer</b>              |
| <b>Table 4.Supp.3C</b> | <b>Calculation of DA-Event for Dermal Exposure to Groundwater – Memphis Aquifer</b>                   |
| <b>Table 5.1</b>       | <b>Noncancer Toxicity Data – Oral/Dermal</b>                                                          |
| <b>Table 5.2</b>       | <b>Noncancer Toxicity Data – Inhalation</b>                                                           |
| <b>Table 6.1</b>       | <b>Cancer Toxicity Data – Oral/Dermal</b>                                                             |
| <b>Table 6.2</b>       | <b>Cancer Toxicity Data – Inhalation</b>                                                              |
| <b>Table 7.1A</b>      | <b>Calculation of COPC Cancer Risks and Noncancer Hazards for a Worker – Fluvial Aquifer</b>          |
| <b>Table 7.1B</b>      | <b>Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident – Fluvial Aquifer</b>        |
| <b>Table 7.2A</b>      | <b>Calculation of COPC Cancer Risks and Noncancer Hazards for a Worker – Intermediate Aquifer</b>     |
| <b>Table 7.2B</b>      | <b>Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident – Intermediate Aquifer</b>   |
| <b>Table 7.3A</b>      | <b>Calculation of COPC Cancer Risks and Noncancer Hazards for a Worker – Memphis Aquifer</b>          |

**Table 7.3B      Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident –  
Memphis Aquifer**

TABLE 0  
 SITE RISK ASSESSMENT IDENTIFICATION INFORMATION  
 HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
 MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                      |                                                               |
|--------------------------------------|---------------------------------------------------------------|
| Site Name/OU:                        | Human Health And Ecological Risk Assessment                   |
| Region:                              | 4                                                             |
| EPA ID Number:                       | TN4210020570                                                  |
| State:                               | TN                                                            |
| Status:                              | Supplemental Remedial Investigation - Groundwater HHRA Update |
| Federal Facility (Y/N):              | Y                                                             |
| Prepared by (Organization):          | HDR                                                           |
| Prepared for (Organization):         | USACE                                                         |
| Document Title:                      | Human Health and Ecological Risk Assessment                   |
| Document Date:                       | November 2017                                                 |
| Probabilistic Risk Assessment (Y/N): | N                                                             |
| Comments:                            | RAGS Tables 0 to 7 and supporting tables                      |

TABLE 1  
SELECTION OF EXPOSURE PATHWAYS  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Scenario<br>Timeframe | Source                                     | Receptor<br>Population | Receptor Age | Medium /<br>Exposure<br>Medium | Exposure Point | Exposure Route | Type of<br>Evaluation | Rationale for Selection or Exclusion of Exposure Pathway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------|------------------------|--------------|--------------------------------|----------------|----------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current/Future        | Releases from on-site and off-site sources | On-Site Worker         | Adult        | Groundwater                    | Tapwater       | Ingestion      | Quantitative          | Contamination is present in the Fluvial and Intermediate/Upper Claiborne aquifers and there is potential for contamination to migrate to the deeper Memphis aquifer, which serves as a current source of drinking water. Ingestion and dermal contact with tapwater from on-Site sinks will be evaluated for a current/future worker, assuming no controls are in place to prohibit exposure to groundwater. Inhalation of contaminants via drinking water was considered to be insignificant. Inhalation via vapor intrusion is evaluated using groundwater-derived air concentrations with the USEPA Vapor Intrusion Screening Level (VISL) calculator. |
|                       |                                            |                        |              |                                |                | Dermal         |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              |                                |                | Inhalation     | None                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              |                                | Indoor Air     | Inhalation     | Quantitative          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Future                |                                            | Off-Site Resident      | Adult        | Groundwater                    | Tapwater       | Ingestion      | Quantitative          | Institutional controls currently prohibit the installation of wells on-Site. There is potential for contamination to migrate to the Memphis aquifer; therefore, a future resident's exposure to groundwater via the ingestion, dermal and inhalation (during showering) pathways are quantitatively evaluated. Exposure to indoor air contaminants via vapor intrusion is evaluated using the USEPA VISL calculator.                                                                                                                                                                                                                                      |
|                       |                                            |                        |              |                                |                | Dermal         |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              |                                | Shower Vapors  | Inhalation     | Quantitative          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              |                                | Indoor Air     | Inhalation     | Quantitative          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       | Child (0-6 years)                          |                        | Groundwater  | Tapwater                       | Ingestion      | Quantitative   |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              |                                | Dermal         |                |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              | Shower Vapors                  | Inhalation     | Quantitative   |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                       |                                            |                        |              | Indoor Air                     | Inhalation     | Quantitative   |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**References:**

CH2M HILL, 2000. Memphis Depot Main Installation Remedial Investigation Report. Prepared for the U.S. Army Engineering and Support Center, Huntsville. January 2000.  
CH2M HILL, 2001. Memphis Depot Main Installation Record of Decision Revision 2. Prepared for the U.S. Army Engineering and Support Center, Huntsville. February 2001.  
HDR, 2017. Fourth Five-Year Review, Revision 0. Prepared for the United States Army Corp of Engineers, Mobile District. June 2017.



TABLE 2.1  
OCCURRENCE, DISTRIBUTION, AND SELECTION OF HUMAN HEALTH COPCS FOR SITE-WIDE GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                    |
|------------------------------------|
| Scenario Timeframe: Current/Future |
| Medium: Groundwater                |
| Exposure Medium: Groundwater       |

| Exposure Point | T or D | Constituent Group | Constituent                 | CASRN      | Minimum Detected Concentration (ug/L) | Qual | Maximum Detected Concentration (ug/L) | Qual | Location of Maximum Detected Concentration | Sample Count | Detect Count | Detection Frequency (%) | Range of Detection Limits (ug/L) | Concentration used for Screening (ug/L) (1) | Federal MCL (ug/L) (2) | USEPA RSL Resident Tapwater (ug/L) (3) |       | COPC Flag (Y/N) | Rationale for Selection or Deletion |
|----------------|--------|-------------------|-----------------------------|------------|---------------------------------------|------|---------------------------------------|------|--------------------------------------------|--------------|--------------|-------------------------|----------------------------------|---------------------------------------------|------------------------|----------------------------------------|-------|-----------------|-------------------------------------|
|                |        |                   |                             |            |                                       |      |                                       |      |                                            |              |              |                         |                                  |                                             |                        | Value                                  | Basis |                 |                                     |
| Fluvial        | T      | VOC               | 1,1,1,2-Tetrachloroethane   | 630-20-6   | 0.307                                 | J    | 0.307                                 | J    | PMW21-04                                   | 1137         | 1            | 0.1                     | 0.25 - 25                        | 0.307                                       | NC                     | 0.57                                   | c*    | N               | Below screening level.              |
| Fluvial        | T      | VOC               | 1,1,1-Trichloroethane       | 71-55-6    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.125 - 25                       | ND                                          | 200                    | 800                                    | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 1,1,2,2-Tetrachloroethane   | 79-34-5    | 0.207                                 | J    | 2.4                                   |      | MW-218                                     | 1137         | 59           | 5                       | 0.2 - 20                         | 2.4                                         | NC                     | 0.076                                  | c     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,1,2-Trichloroethane       | 79-00-5    | 0.29                                  | J    | 0.29                                  | J    | MW-270                                     | 1137         | 1            | 0.1                     | 0.25 - 25                        | 0.29                                        | 5                      | 0.041                                  | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,1-Dichloroethane          | 75-34-3    | 0.132                                 | J    | 10.8                                  | J    | IW92-03                                    | 1137         | 50           | 4                       | 0.125 - 12.5                     | 10.8                                        | NC                     | 2.8                                    | c     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,1-Dichloroethene          | 75-35-4    | 0.504                                 | J    | 13.6                                  |      | MW-263                                     | 1137         | 88           | 8                       | 0.5 - 50                         | 13.6                                        | 7                      | 28                                     | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,1-Dichloropropene         | 563-58-6   | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 1,2,3-Trichlorobenzene      | 87-61-6    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.15 - 15                        | ND                                          | NC                     | 0.7                                    | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 1,2,3-Trichloropropane      | 96-18-4    | 0.694                                 | J    | 83.3                                  |      | PMW92-06                                   | 1137         | 54           | 5                       | 0.5 - 50                         | 83.3                                        | NC                     | 0.00075                                | c*    | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,2,4-Trichlorobenzene      | 120-82-1   | 0.291                                 | J    | 6.82                                  | J    | IW85-06                                    | 1137         | 2            | 0.2                     | 0.2 - 20                         | 6.82                                        | 70                     | 0.4                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,2,4-Trimethylbenzene      | 95-63-6    | 0.253                                 | J    | 142                                   |      | IW21-02B                                   | 1137         | 122          | 11                      | 0.25 - 25                        | 142                                         | NC                     | 5.6                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,2-Dibromo-3-chloropropane | 96-12-8    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 1 - 100                          | ND                                          | 0.2                    | 0.00033                                | c     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 1,2-Dibromoethane           | 106-93-4   | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | 0.05                   | 0.0075                                 | c     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 1,2-Dichlorobenzene         | 95-50-1    | 0.126                                 | J    | 19.6                                  | J    | IW85-06                                    | 1137         | 26           | 2                       | 0.125 - 12.5                     | 19.6                                        | 600                    | 30                                     | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | 1,2-Dichloroethane          | 107-06-2   | 0.25                                  | J    | 14.7                                  |      | IW92-03                                    | 1137         | 89           | 8                       | 0.25 - 25                        | 14.7                                        | 5                      | 0.17                                   | c**   | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,2-Dichloropropane         | 78-87-5    | 0.202                                 | J    | 44                                    | J    | IW92-01                                    | 1137         | 100          | 9                       | 0.2 - 20                         | 44                                          | 5                      | 0.82                                   | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,3,5-Trimethylbenzene      | 108-67-8   | 0.261                                 | J    | 34.1                                  |      | IW21-02B                                   | 1137         | 42           | 4                       | 0.25 - 25                        | 34.1                                        | NC                     | 6                                      | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 1,3-Dichlorobenzene         | 541-73-1   | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 1,3-Dichloropropane         | 142-28-9   | 0.234                                 | J    | 28.7                                  | J    | IW92-01                                    | 1137         | 26           | 2                       | 0.2 - 20                         | 28.7                                        | NC                     | 37                                     | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | 1,4-Dichlorobenzene         | 106-46-7   | 0.134                                 | J    | 3.67                                  | J    | IW85-06                                    | 1137         | 9            | 1                       | 0.125 - 12.5                     | 3.67                                        | 75                     | 0.48                                   | c     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 2,2-Dichloropropane         | 594-20-7   | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 2-Chlorotoluene             | 95-49-8    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.125 - 12.5                     | ND                                          | NC                     | 24                                     | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 2-Hexanone                  | 591-78-6   | 2.52                                  | J    | 122                                   | J    | IW92-07                                    | 1137         | 20           | 2                       | 2.5 - 250                        | 122                                         | NC                     | 3.8                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | 4-Chlorotoluene             | 106-43-4   | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | 25                                     | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | 4-Isopropyltoluene          | 99-87-6    | 0.267                                 | J    | 1.44                                  | J    | IW21-01A                                   | 1137         | 4            | 0.35                    | 0.25 - 25                        | 1.44                                        | NC                     | NC                                     |       | Y               | No screening level.                 |
| Fluvial        | T      | VOC               | Acetone                     | 67-64-1    | 2.55                                  | J    | 7790                                  |      | IW101-04C                                  | 1137         | 870          | 76.5                    | 2.5 - 5000                       | 7790                                        | NC                     | 1400                                   | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Benzene                     | 71-43-2    | 0.126                                 | J    | 6.42                                  | J    | IW101-07B                                  | 1137         | 26           | 2                       | 0.125 - 12.5                     | 6.42                                        | 5                      | 0.46                                   | c**   | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Bromobenzene                | 108-86-1   | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.125 - 12.5                     | ND                                          | NC                     | 6.2                                    | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Bromochloromethane          | 74-97-5    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.2 - 20                         | ND                                          | NC                     | 8.3                                    | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Bromodichloromethane        | 75-27-4    | 0.597                                 |      | 23                                    | J    | IW92-01                                    | 1137         | 6            | 1                       | 0.25 - 25                        | 23                                          | 80                     | 0.13                                   | c     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Bromoform                   | 75-25-2    | 0.704                                 | J    | 0.704                                 | J    | MW-217                                     | 1137         | 1            | 0.1                     | 0.5 - 50                         | 0.704                                       | 80                     | 3.3                                    | c*    | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Bromomethane                | 74-83-9    | 0.714                                 | J    | 29.8                                  | J    | IW101-07B                                  | 1137         | 3            | 0.3                     | 0.5 - 50                         | 29.8                                        | NC                     | 0.75                                   | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Carbon tetrachloride        | 56-23-5    | 0.278                                 | J    | 196                                   |      | DR2-5                                      | 1137         | 195          | 17.2                    | 0.25 - 25                        | 196                                         | 5                      | 0.46                                   | c*    | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Chlorobenzene               | 108-90-7   | 0.13                                  | J    | 0.5                                   | J    | PMW85-01                                   | 1137         | 32           | 3                       | 0.125 - 12.5                     | 0.5                                         | 100                    | 7.8                                    | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Chloroethane                | 75-00-3    | 11                                    | J    | 160                                   | J    | IW92-01                                    | 1137         | 7            | 1                       | 0.5 - 50                         | 160                                         | NC                     | 2100                                   | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Chloroform                  | 67-66-3    | 0.125                                 | J    | 22100                                 |      | IW92-03                                    | 1137         | 370          | 33                      | 0.125 - 250                      | 22100                                       | 80                     | 0.22                                   | c*    | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Chloromethane               | 74-87-3    | 0.503                                 | J    | 74.7                                  | J    | IW92-01                                    | 1137         | 28           | 2                       | 0.5 - 50                         | 74.7                                        | NC                     | 19                                     | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | cis-1,2-Dichloroethylene    | 156-59-2   | 0.251                                 | J    | 323                                   |      | IW101-07C                                  | 1137         | 907          | 80                      | 0.25 - 25                        | 323                                         | 70                     | 3.6                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | cis-1,3-Dichloropropene     | 10061-01-5 | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Dibromochloromethane        | 124-48-1   | 0.718                                 |      | 0.718                                 |      | MW-266                                     | 1137         | 1            | 0.09                    | 0.25 - 25                        | 0.718                                       | 80                     | 0.87                                   | c*    | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Dibromomethane              | 74-95-3    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | 0.83                                   | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Dichlorodifluoromethane     | 75-71-8    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | 20                                     | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Ethylbenzene                | 100-41-4   | 0.266                                 | J    | 5.04                                  |      | IW21-03A                                   | 1137         | 9            | 1                       | 0.25 - 25                        | 5.04                                        | 700                    | 1.5                                    | c*    | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Isopropylbenzene (Cumene)   | 98-82-8    | 0.501                                 | J    | 3.39                                  | J    | IW21-02B                                   | 1137         | 4            | 0.35                    | 0.25 - 25                        | 3.39                                        | NC                     | 45                                     | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Methyl Ethyl Ketone         | 78-93-3    | 2.88                                  | J    | 20800                                 |      | IW85-06                                    | 1137         | 377          | 33.2                    | 2.5 - 5000                       | 20800                                       | NC                     | 560                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Methyl Isobutyl Ketone      | 108-10-1   | 2.83                                  | J    | 18.8                                  | J    | PMW101-02A                                 | 1137         | 4            | 0.35                    | 2.5 - 250                        | 18.8                                        | NC                     | 630                                    | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Methyl tert-butyl ether     | 1634-04-4  | 0.504                                 | J    | 78.2                                  |      | IW21-01A                                   | 1137         | 409          | 36.0                    | 0.5 - 50                         | 78.2                                        | NC                     | 14                                     | c*    | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Methylene chloride          | 75-09-2    | 0.26                                  | J    | 177                                   | J    | DR2-2                                      | 1137         | 53           | 5                       | 0.25 - 25                        | 177                                         | 5                      | 11                                     | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | N-butylbenzene              | 104-51-8   | 0.259                                 | J    | 3.68                                  | J    | IW21-02B                                   | 1137         | 5            | 0.44                    | 0.25 - 25                        | 3.68                                        | NC                     | 100                                    | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | N-propylbenzene             | 103-65-1   | 0.126                                 | J    | 17.9                                  |      | IW21-02B                                   | 1137         | 47           | 4.1                     | 0.125 - 12.5                     | 17.9                                        | NC                     | 66                                     | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | sec-Butylbenzene            | 135-98-8   | 0.281                                 | J    | 1.93                                  | J    | IW21-02B                                   | 1137         | 3            | 0.26                    | 0.25 - 25                        | 1.93                                        | NC                     | 200                                    | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Styrene                     | 100-42-5   | 2.69                                  | J    | 2.69                                  | J    | IW92-01                                    | 1137         | 1            | 0.1                     | 0.125 - 12.5                     | 2.69                                        | 100                    | 120                                    | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | tert-Butylbenzene           | 98-06-6    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | 69                                     | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Tetrachloroethylene (PCE)   | 127-18-4   | 0.253                                 | J    | 300                                   |      | PMW21-04                                   | 1137         | 830          | 73                      | 0.25 - 25                        | 300                                         | 5                      | 4.1                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Toluene                     | 108-88-3   | 0.255                                 | J    | 149                                   |      | IW101-03A                                  | 1137         | 77           | 7                       | 0.25 - 25                        | 149                                         | 1000                   | 110                                    | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | trans-1,2-Dichloroethylene  | 156-60-5   | 0.258                                 | J    | 7.62                                  |      | MW-270                                     | 1137         | 55           | 5                       | 0.25 - 25                        | 7.62                                        | 100                    | 36                                     | n     | N               | Below screening level.              |

TABLE 2.1  
OCCURRENCE, DISTRIBUTION, AND SELECTION OF HUMAN HEALTH COPCS FOR SITE-WIDE GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                    |
|------------------------------------|
| Scenario Timeframe: Current/Future |
| Medium: Groundwater                |
| Exposure Medium: Groundwater       |

| Exposure Point | T or D | Constituent Group | Constituent                 | CASRN       | Minimum Detected Concentration (ug/L) | Qual | Maximum Detected Concentration (ug/L) | Qual | Location of Maximum Detected Concentration | Sample Count | Detect Count | Detection Frequency (%) | Range of Detection Limits (ug/L) | Concentration used for Screening (ug/L) (1) | Federal MCL (ug/L) (2) | USEPA RSL Resident Tapwater (ug/L) (3) |       | COPC Flag (Y/N) | Rationale for Selection or Deletion |
|----------------|--------|-------------------|-----------------------------|-------------|---------------------------------------|------|---------------------------------------|------|--------------------------------------------|--------------|--------------|-------------------------|----------------------------------|---------------------------------------------|------------------------|----------------------------------------|-------|-----------------|-------------------------------------|
|                |        |                   |                             |             |                                       |      |                                       |      |                                            |              |              |                         |                                  |                                             |                        | Value                                  | Basis |                 |                                     |
| Fluvial        | T      | VOC               | trans-1,3-Dichloropropene   | 10061-02-6  | ND                                    | J    | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.5 - 50                         | ND                                          | NC                     | NC                                     | n     | N               | Not detected.                       |
| Fluvial        | T      | VOC               | Trichloroethylene (TCE)     | 79-01-6     | 0.257                                 | J    | 286                                   |      | MW-270                                     | 1137         | 797          | 70                      | 0.25 - 25                        | 286                                         | 5                      | 0.28                                   | n     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Trichlorofluoromethane      | 75-69-4     | 0.263                                 | J    | 2.89                                  |      | MW-218                                     | 1137         | 27           | 2                       | 0.25 - 25                        | 2.89                                        | NC                     | 520                                    | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Vinyl chloride              | 75-01-4     | 0.253                                 | J    | 188                                   |      | MW-100B                                    | 1137         | 147          | 13                      | 0.25 - 25                        | 188                                         | 2                      | 0.019                                  | c     | Y               | Above screening level.              |
| Fluvial        | T      | VOC               | Xylenes-m,p                 | 179601-23-1 | 0.64                                  | J    | 3.23                                  | J    | IW21-02B                                   | 1137         | 13           | 1                       | 0.5 - 50                         | 3.23                                        | NC                     | 19                                     | n     | N               | Below screening level.              |
| Fluvial        | T      | VOC               | Xylenes-o                   | 95-47-6     | 0.261                                 | J    | 6.45                                  |      | IW21-01A                                   | 1137         | 18           | 2                       | 0.25 - 25                        | 6.45                                        | NC                     | 19                                     | n     | N               | Below screening level.              |
| Fluvial        | T      | SVOC              | Hexachlorobutadiene         | 87-68-3     | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.25 - 25                        | ND                                          | NC                     | 0.14                                   | c**   | N               | Not detected.                       |
| Fluvial        | T      | SVOC              | Naphthalene                 | 91-20-3     | 0.247                                 | J    | 6.94                                  | J    | IW92-03                                    | 1137         | 8            | 1                       | 0.2 - 20                         | 6.94                                        | NC                     | 0.17                                   | c**   | Y               | Above screening level.              |
| Fluvial        | T      | OTHER             | 1-Chlorohexane              | 544-10-5    | ND                                    |      | ND                                    |      | NA                                         | 1137         | 0            | 0                       | 0.125 - 12.5                     | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Fluvial        | T      | OTHER             | Carbon disulfide            | 75-15-0     | 0.515                                 | J    | 28.3                                  |      | IW85-05                                    | 1138         | 32           | 3                       | 0.5 - 50                         | 28.3                                        | NC                     | 81                                     | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | 1,1,1,2-Tetrachloroethane   | 630-20-6    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 0.57                                   | c*    | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,1,1-Trichloroethane       | 71-55-6     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 200                    | 800                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,1,2,2-Tetrachloroethane   | 79-34-5     | 0.202                                 | J    | 0.538                                 |      | MW-214A                                    | 244          | 13           | 5                       | 0.2 - 4                          | 0.538                                       | NC                     | 0.076                                  | c     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | 1,1,2-Trichloroethane       | 79-00-5     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 5                      | 0.041                                  | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,1-Dichloroethane          | 75-34-3     | 0.173                                 | J    | 1.38                                  |      | MW-108                                     | 244          | 56           | 23                      | 0.125 - 2.5                      | 1.38                                        | NC                     | 2.8                                    | c     | N               | Below screening level.              |
| I/UC           | T      | VOC               | 1,1-Dichloroethene          | 75-35-4     | 0.522                                 | J    | 1.65                                  |      | MW-108                                     | 244          | 33           | 14                      | 0.5 - 10                         | 1.65                                        | 7                      | 28                                     | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | 1,1-Dichloropropene         | 563-58-6    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2,3-Trichlorobenzene      | 87-61-6     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.15 - 3                         | ND                                          | NC                     | 0.7                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2,3-Trichloropropane      | 96-18-4     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.5 - 10                         | ND                                          | NC                     | 0.00075                                | c*    | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2,4-Trichlorobenzene      | 120-82-1    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.2 - 4                          | ND                                          | 70                     | 0.4                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2,4-Trimethylbenzene      | 95-63-6     | 2.21                                  | J    | 2.21                                  | J    | MW-203A                                    | 244          | 1            | 0.4                     | 0.25 - 5                         | 2.21                                        | NC                     | 5.6                                    | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | 1,2-Dibromo-3-chloropropane | 96-12-8     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 1 - 20                           | ND                                          | 0.2                    | 0.00033                                | c     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2-Dibromoethane           | 106-93-4    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 0.05                   | 0.0075                                 | c     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2-Dichlorobenzene         | 95-50-1     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | 600                    | 30                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2-Dichloroethane          | 107-06-2    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 5                      | 0.17                                   | c**   | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,2-Dichloropropane         | 78-87-5     | 0.232                                 | J    | 0.232                                 | J    | MW-256                                     | 244          | 1            | 0.4                     | 0.2 - 4                          | 0.232                                       | 5                      | 0.82                                   | n     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | 1,3,5-Trimethylbenzene      | 108-67-8    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 6                                      | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,3-Dichlorobenzene         | 541-73-1    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,3-Dichloropropane         | 142-28-9    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.2 - 4                          | ND                                          | NC                     | 37                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 1,4-Dichlorobenzene         | 106-46-7    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | 75                     | 0.48                                   | c     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 2,2-Dichloropropane         | 594-20-7    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | VOC               | 2-Chlorotoluene             | 95-49-8     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | NC                     | 24                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 2-Hexanone                  | 591-78-6    | 2.76                                  | J    | 2.76                                  | J    | MW-203A                                    | 244          | 1            | 0.41                    | 2.5 - 50                         | 2.76                                        | NC                     | 3.8                                    | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | 4-Chlorotoluene             | 106-43-4    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 25                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | 4-Isopropyltoluene          | 99-87-6     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | VOC               | Acetone                     | 67-64-1     | 2.5                                   | J    | 1210                                  | J    | MW-203A                                    | 244          | 185          | 76                      | 2.5 - 50                         | 1210                                        | NC                     | 1400                                   | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | Benzene                     | 71-43-2     | 0.246                                 | J    | 0.246                                 | J    | MW-273                                     | 244          | 1            | 0.41                    | 0.125 - 2.5                      | 0.246                                       | 5                      | 0.46                                   | c**   | N               | Below screening level.              |
| I/UC           | T      | VOC               | Bromobenzene                | 108-86-1    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | NC                     | 6.2                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Bromochloromethane          | 74-97-5     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.2 - 4                          | ND                                          | NC                     | 8.3                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Bromodichloromethane        | 75-27-4     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 80                     | 0.13                                   | c     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Bromoform                   | 75-25-2     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.5 - 10                         | ND                                          | 80                     | 3.3                                    | c*    | N               | Not detected.                       |
| I/UC           | T      | VOC               | Bromomethane                | 74-83-9     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.5 - 10                         | ND                                          | NC                     | 0.75                                   | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Carbon tetrachloride        | 56-23-5     | 0.251                                 | J    | 1.19                                  |      | MW-214B                                    | 244          | 75           | 31                      | 0.25 - 5                         | 1.19                                        | 5                      | 0.46                                   | c*    | Y               | Above screening level.              |
| I/UC           | T      | VOC               | Chlorobenzene               | 108-90-7    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | 100                    | 7.8                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Chloroethane                | 75-00-3     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.5 - 10                         | ND                                          | NC                     | 2100                                   | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Chloroform                  | 67-66-3     | 0.127                                 | JB   | 11                                    |      | MW-207A                                    | 244          | 135          | 55                      | 0.125 - 2.5                      | 11                                          | 80                     | 0.22                                   | c*    | Y               | Above screening level.              |
| I/UC           | T      | VOC               | Chloromethane               | 74-87-3     | 0.528                                 | J    | 0.938                                 | J    | MW-90                                      | 244          | 4            | 2                       | 0.5 - 10                         | 0.938                                       | NC                     | 19                                     | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | cis-1,2-Dichloroethylene    | 156-59-2    | 0.252                                 | J    | 27.6                                  |      | MW-203A                                    | 244          | 120          | 49                      | 0.25 - 5                         | 27.6                                        | 70                     | 3.6                                    | n     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | cis-1,3-Dichloropropene     | 10061-01-5  | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | VOC               | Dibromochloromethane        | 124-48-1    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 80                     | 0.87                                   | c*    | N               | Not detected.                       |
| I/UC           | T      | VOC               | Dibromomethane              | 74-95-3     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 0.83                                   | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Dichlorodifluoromethane     | 75-71-8     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 20                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Ethylbenzene                | 100-41-4    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 700                    | 1.5                                    | c*    | N               | Not detected.                       |
| I/UC           | T      | VOC               | Isopropylbenzene (Cumene)   | 98-82-8     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 45                                     | n     | N               | Not detected.                       |

TABLE 2.1  
OCCURRENCE, DISTRIBUTION, AND SELECTION OF HUMAN HEALTH COPCS FOR SITE-WIDE GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                    |
|------------------------------------|
| Scenario Timeframe: Current/Future |
| Medium: Groundwater                |
| Exposure Medium: Groundwater       |

| Exposure Point | T or D | Constituent Group | Constituent                 | CASRN       | Minimum Detected Concentration (ug/L) | Qual | Maximum Detected Concentration (ug/L) | Qual | Location of Maximum Detected Concentration | Sample Count | Detect Count | Detection Frequency (%) | Range of Detection Limits (ug/L) | Concentration used for Screening (ug/L) (1) | Federal MCL (ug/L) (2) | USEPA RSL Resident Tapwater (ug/L) (3) |       | COPC Flag (Y/N) | Rationale for Selection or Deletion |
|----------------|--------|-------------------|-----------------------------|-------------|---------------------------------------|------|---------------------------------------|------|--------------------------------------------|--------------|--------------|-------------------------|----------------------------------|---------------------------------------------|------------------------|----------------------------------------|-------|-----------------|-------------------------------------|
|                |        |                   |                             |             |                                       |      |                                       |      |                                            |              |              |                         |                                  |                                             |                        | Value                                  | Basis |                 |                                     |
| I/UC           | T      | VOC               | Methyl Ethyl Ketone         | 78-93-3     | 3.33                                  | J    | 2910                                  |      | MW-203A                                    | 244          | 11           | 5                       | 2.5 - 62.5                       | 2910                                        | NC                     | 560                                    | n     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | Methyl Isobutyl Ketone      | 108-10-1    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 2.5 - 50                         | ND                                          | NC                     | 630                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Methyl tert-butyl ether     | 1634-04-4   | 0.514                                 | J    | 5.05                                  |      | MW-39A                                     | 244          | 65           | 27                      | 0.5 - 10                         | 5.05                                        | NC                     | 14                                     | c*    | N               | Below screening level.              |
| I/UC           | T      | VOC               | Methylene chloride          | 75-09-2     | 2.58                                  | J    | 2.58                                  | J    | MW-203A                                    | 244          | 1            | 0.41                    | 0.25 - 5                         | 2.58                                        | 5                      | 11                                     | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | N-butylbenzene              | 104-51-8    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 100                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | N-propylbenzene             | 103-65-1    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | NC                     | 66                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | sec-Butylbenzene            | 135-98-8    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 200                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Styrene                     | 100-42-5    | 0.195                                 | J    | 0.195                                 | J    | MW-273                                     | 244          | 1            | 0.41                    | 0.125 - 2.5                      | 0.195                                       | 100                    | 120                                    | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | tert-Butylbenzene           | 98-06-6     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 69                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Tetrachloroethylene (PCE)   | 127-18-4    | 0.262                                 | J    | 127                                   |      | MW-203A                                    | 244          | 203          | 83                      | 0.25 - 5                         | 127                                         | 5                      | 4.1                                    | n     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | Toluene                     | 108-88-3    | 0.416                                 | J    | 12.2                                  |      | MW-203A                                    | 244          | 4            | 2                       | 0.25 - 5                         | 12.2                                        | 1000                   | 110                                    | n     | N               | Below screening level.              |
| I/UC           | T      | VOC               | trans-1,2-Dichloroethylene  | 156-60-5    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | 100                    | 36                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | trans-1,3-Dichloropropene   | 10061-02-6  | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.5 - 10                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | VOC               | Trichloroethylene (TCE)     | 79-01-6     | 0.39                                  | J    | 37.1                                  |      | MW-207A                                    | 244          | 200          | 82                      | 0.25 - 5                         | 37.1                                        | 5                      | 0.28                                   | n     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | Trichlorofluoromethane      | 75-69-4     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 520                                    | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Vinyl chloride              | 75-01-4     | 0.253                                 | J    | 7.98                                  | J    | MW-203A                                    | 244          | 22           | 9                       | 0.25 - 5                         | 7.98                                        | 2                      | 0.019                                  | c     | Y               | Above screening level.              |
| I/UC           | T      | VOC               | Xylenes-m,p                 | 179601-23-1 | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.5 - 10                         | ND                                          | NC                     | 19                                     | n     | N               | Not detected.                       |
| I/UC           | T      | VOC               | Xylenes-o                   | 95-47-6     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 19                                     | n     | N               | Not detected.                       |
| I/UC           | T      | SVOC              | Hexachlorobutadiene         | 87-68-3     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.25 - 5                         | ND                                          | NC                     | 0.14                                   | c**   | N               | Not detected.                       |
| I/UC           | T      | SVOC              | Naphthalene                 | 91-20-3     | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.2 - 4                          | ND                                          | NC                     | 0.17                                   | c**   | N               | Not detected.                       |
| I/UC           | T      | OTHER             | 1-Chlorohexane              | 544-10-5    | ND                                    |      | ND                                    |      | NA                                         | 244          | 0            | 0                       | 0.125 - 2.5                      | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| I/UC           | T      | OTHER             | Carbon disulfide            | 75-15-0     | 0.64                                  | J    | 1.45                                  |      | MW-262                                     | 244          | 2            | 1                       | 0.5 - 10                         | 1.45                                        | NC                     | 81                                     | n     | N               | Below screening level.              |
| Memphis        | T      | VOC               | 1,1,1,2-Tetrachloroethane   | 630-20-6    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 0.5                       | ND                                          | NC                     | 0.57                                   | c*    | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,1,1-Trichloroethane       | 71-55-6     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 200                    | 800                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,1,2,2-Tetrachloroethane   | 79-34-5     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.2 - 0.5                        | ND                                          | NC                     | 0.076                                  | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,1,2-Trichloroethane       | 79-00-5     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 5                      | 0.041                                  | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,1-Dichloroethane          | 75-34-3     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | NC                     | 2.8                                    | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,1-Dichloroethene          | 75-35-4     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | 7                      | 28                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,1-Dichloropropene         | 563-58-6    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2,3-Trichlorobenzene      | 87-61-6     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.15 - 1                         | ND                                          | NC                     | 0.7                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2,3-Trichloropropane      | 96-18-4     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | NC                     | 0.00075                                | c*    | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2,4-Trichlorobenzene      | 120-82-1    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.2 - 1                          | ND                                          | 70                     | 0.4                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2,4-Trimethylbenzene      | 95-63-6     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 5.6                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2-Dibromo-3-chloropropane | 96-12-8     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 1 - 2                            | ND                                          | 0.2                    | 0.00033                                | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2-Dibromoethane           | 106-93-4    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 0.05                   | 0.0075                                 | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2-Dichlorobenzene         | 95-50-1     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | 600                    | 30                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2-Dichloroethane          | 107-06-2    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 0.5                       | ND                                          | 5                      | 0.17                                   | c**   | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,2-Dichloropropane         | 78-87-5     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.2 - 1                          | ND                                          | 5                      | 0.82                                   | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,3,5-Trimethylbenzene      | 108-67-8    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 6                                      | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,3-Dichlorobenzene         | 541-73-1    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,3-Dichloropropane         | 142-28-9    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.2 - 0.4                        | ND                                          | NC                     | 37                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 1,4-Dichlorobenzene         | 106-46-7    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 0.5                      | ND                                          | 75                     | 0.48                                   | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 2,2-Dichloropropane         | 594-20-7    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Memphis        | T      | VOC               | 2-Chlorotoluene             | 95-49-8     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | NC                     | 24                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 2-Hexanone                  | 591-78-6    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 2.5 - 10                         | ND                                          | NC                     | 3.8                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 4-Chlorotoluene             | 106-43-4    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 25                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | 4-Isopropyltoluene          | 99-87-6     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | NC                                     |       | N               | Not detected.                       |
| Memphis        | T      | VOC               | Acetone                     | 67-64-1     | 2.98                                  | J    | 25.3                                  |      | MW-255                                     | 21           | 16           | 76                      | 2.5 - 10                         | 25.3                                        | NC                     | 1400                                   | n     | N               | Below screening level.              |
| Memphis        | T      | VOC               | Benzene                     | 71-43-2     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 0.4                      | ND                                          | 5                      | 0.46                                   | c**   | N               | Not detected.                       |
| Memphis        | T      | VOC               | Bromobenzene                | 108-86-1    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | NC                     | 6.2                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Bromochloromethane          | 74-97-5     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.2 - 1                          | ND                                          | NC                     | 8.3                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Bromodichloromethane        | 75-27-4     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 0.5                       | ND                                          | 80                     | 0.13                                   | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Bromoform                   | 75-25-2     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | 80                     | 3.3                                    | c*    | N               | Not detected.                       |
| Memphis        | T      | VOC               | Bromomethane                | 74-83-9     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | NC                     | 0.75                                   | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Carbon tetrachloride        | 56-23-5     | 0.27                                  | J    | 1.15                                  |      | MW-254                                     | 21           | 14           | 67                      | 0.25 - 1                         | 1.15                                        | 5                      | 0.46                                   | c*    | Y               | Above screening level.              |

TABLE 2.1  
OCCURRENCE, DISTRIBUTION, AND SELECTION OF HUMAN HEALTH COPCS FOR SITE-WIDE GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                    |
|------------------------------------|
| Scenario Timeframe: Current/Future |
| Medium: Groundwater                |
| Exposure Medium: Groundwater       |

| Exposure Point | T or D | Constituent Group | Constituent                | CASRN       | Minimum Detected Concentration (ug/L) | Qual | Maximum Detected Concentration (ug/L) | Qual | Location of Maximum Detected Concentration | Sample Count | Detect Count | Detection Frequency (%) | Range of Detection Limits (ug/L) | Concentration used for Screening (ug/L) (1) | Federal MCL (ug/L) (2) | USEPA RSL Resident Tapwater (ug/L) (3) |       | COPC Flag (Y/N) | Rationale for Selection or Deletion |
|----------------|--------|-------------------|----------------------------|-------------|---------------------------------------|------|---------------------------------------|------|--------------------------------------------|--------------|--------------|-------------------------|----------------------------------|---------------------------------------------|------------------------|----------------------------------------|-------|-----------------|-------------------------------------|
|                |        |                   |                            |             |                                       |      |                                       |      |                                            |              |              |                         |                                  |                                             |                        | Value                                  | Basis |                 |                                     |
| Memphis        | T      | VOC               | Chlorobenzene              | 108-90-7    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 0.5                      | ND                                          | 100                    | 7.8                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Chloroethane               | 75-00-3     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | NC                     | 2100                                   | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Chloroform                 | 67-66-3     | 0.146                                 | J    | 0.295                                 | J    | MW-254                                     | 21           | 15           | 71                      | 0.125 - 0.3                      | 0.295                                       | 80                     | 0.22                                   | c*    | Y               | Above screening level.              |
| Memphis        | T      | VOC               | Chloromethane              | 74-87-3     | 0.527                                 | J    | 1.11                                  |      | MW-140                                     | 21           | 2            | 10                      | 0.5 - 1                          | 1.11                                        | NC                     | 19                                     | n     | N               | Below screening level.              |
| Memphis        | T      | VOC               | cis-1,2-Dichloroethylene   | 156-59-2    | 0.294                                 | J    | 0.412                                 | J    | MW-254                                     | 21           | 8            | 38                      | 0.25 - 1                         | 0.412                                       | 70                     | 3.6                                    | n     | N               | Below screening level.              |
| Memphis        | T      | VOC               | cis-1,3-Dichloropropene    | 10061-01-5  | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 0.5                       | ND                                          | NC                     | NC                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Dibromochloromethane       | 124-48-1    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 0.5                       | ND                                          | 80                     | 0.87                                   | c*    | N               | Not detected.                       |
| Memphis        | T      | VOC               | Dibromomethane             | 74-95-3     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 0.83                                   | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Dichlorodifluoromethane    | 75-71-8     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 20                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Ethylbenzene               | 100-41-4    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 700                    | 1.5                                    | c*    | N               | Not detected.                       |
| Memphis        | T      | VOC               | Isopropylbenzene (Cumene)  | 98-82-8     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 45                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Methyl Ethyl Ketone        | 78-93-3     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 2.5 - 10                         | ND                                          | NC                     | 560                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Methyl Isobutyl Ketone     | 108-10-1    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 2.5 - 10                         | ND                                          | NC                     | 630                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Methyl tert-butyl ether    | 1634-04-4   | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 5                          | ND                                          | NC                     | 14                                     | c*    | N               | Not detected.                       |
| Memphis        | T      | VOC               | Methylene chloride         | 75-09-2     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 5                      | 11                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | N-butylbenzene             | 104-51-8    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 100                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | N-propylbenzene            | 103-65-1    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | NC                     | 66                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | sec-Butylbenzene           | 135-98-8    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 200                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Styrene                    | 100-42-5    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | 100                    | 120                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | tert-Butylbenzene          | 98-06-6     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 69                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Tetrachloroethylene (PCE)  | 127-18-4    | 0.573                                 | J    | 10.9                                  |      | MW-140                                     | 21           | 15           | 71                      | 0.25 - 1                         | 10.9                                        | 5                      | 4.1                                    | n     | Y               | Above screening level.              |
| Memphis        | T      | VOC               | Toluene                    | 108-88-3    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 1000                   | 110                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | trans-1,2-Dichloroethylene | 156-60-5    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 100                    | 36                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | trans-1,3-Dichloropropene  | 10061-02-6  | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | NC                     | NC                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Trichloroethylene (TCE)    | 79-01-6     | 0.353                                 | J    | 3.15                                  |      | MW-254                                     | 21           | 21           | 100                     | 0.25 - 1                         | 3.15                                        | 5                      | 0.28                                   | n     | Y               | Above screening level.              |
| Memphis        | T      | VOC               | Trichlorofluoromethane     | 75-69-4     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 520                                    | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Vinyl chloride             | 75-01-4     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | 2                      | 0.019                                  | c     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Xylenes-m,p                | 179601-23-1 | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 2                          | ND                                          | NC                     | 19                                     | n     | N               | Not detected.                       |
| Memphis        | T      | VOC               | Xylenes-o                  | 95-47-6     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 1                         | ND                                          | NC                     | 19                                     | n     | N               | Not detected.                       |
| Memphis        | T      | SVOC              | Hexachlorobutadiene        | 87-68-3     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.25 - 0.6                       | ND                                          | NC                     | 0.14                                   | c**   | N               | Not detected.                       |
| Memphis        | T      | SVOC              | Naphthalene                | 91-20-3     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.2 - 1                          | ND                                          | NC                     | 0.17                                   | c**   | N               | Not detected.                       |
| Memphis        | T      | OTHER             | 1-Chlorohexane             | 544-10-5    | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.125 - 1                        | ND                                          | NC                     | NC                                     | n     | N               | Not detected.                       |
| Memphis        | T      | OTHER             | Carbon disulfide           | 75-15-0     | ND                                    |      | ND                                    |      | NA                                         | 21           | 0            | 0                       | 0.5 - 1                          | ND                                          | NC                     | 81                                     | n     | N               | Not detected.                       |

**Notes:**  
(1) The maximum detected concentrations for site-wide groundwater are used for the COPC screening. Groundwater data that do not meet the requirements in the USEPA memorandum titled *Determining Groundwater Exposure Point Concentrations, Supplemental Guidance* were not excluded from this screening, e.g., samples collected from piezometers (USEPA 2014).  
(2) Federal Maximum Contaminant Levels (MCLs) taken from USEPA Regional Screening Level (RSL) tables.  
(3) USEPA RSLs at a target risk of 1E-06 and target hazard quotient of 0.1.  
Only unfiltered (total) groundwater data is used for COPC screening.  
The COPC screening applies the minimum of the Federal MCLs and USEPA Tapwater RSLs.  
The COPC screening applies the criteria for xylenes (total) to its isomers.

|                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                          |                                                                                              |                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Abbreviations:</b><br>COPC -- Constituent of potential concern<br>I/UC -- Intermediate / Upper Claiborne Aquifer<br>MCL -- Maximum Contaminant Level<br>NA -- Not applicable<br>NC -- No criteria<br>ND -- Not detected<br>Qual -- Qualifier | <b>RSL --</b> USEPA Regional Screening Levels<br><b>SVOC --</b> Semi-volatile organic compound<br><b>T or D --</b> Total or dissolved<br><b>ug/L --</b> Micrograms per liter<br><b>USEPA --</b> United States Environmental Protection Agency<br><b>VOC --</b> Volatile organic compound | <b>Qualifiers:</b><br><b>B --</b> Blank contamination<br><b>J --</b> Estimated concentration | <b>RSL Basis:</b><br><b>* --</b> Where noncancer RSL < 100 times cancer RSL<br><b>** --</b> Where noncancer RSL < 10 times cancer RSL<br><b>c --</b> Cancer<br><b>n --</b> Noncancer |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**References:**  
USEPA. 2014. Memorandum – Determining Groundwater Exposure Point Concentrations, Supplemental Guidance. March 11. Available online: <https://www.epa.gov/risk/exposure-point-concentrations-groundwater>  
USEPA. 2019. Regional Screening Levels Generic Tables. May. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 2.SUPP.1  
SUMMARY OF HUMAN HEALTH COPCS  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Constituent Group | Constituent                      | CASRN     | Fluvial Aquifer | Intermediate / Upper Claiborne Aquifer | Memphis Aquifer |
|-------------------|----------------------------------|-----------|-----------------|----------------------------------------|-----------------|
| VOC               | 1,1,2,2-Tetrachloroethane        | 79-34-5   | Yes             | Yes                                    | No              |
| VOC               | 1,1-Dichloroethene               | 75-35-4   | Yes             | No                                     | No              |
| VOC               | 1,2,3-Trichloropropane           | 96-18-4   | Yes             | No                                     | No              |
| VOC               | 1,2,4-Trimethylbenzene           | 95-63-6   | Yes             | No                                     | No              |
| VOC               | 1,2-Dichloroethane               | 107-06-2  | Yes             | No                                     | No              |
| VOC               | 1,2-Dichloropropane              | 78-87-5   | Yes             | No                                     | No              |
| VOC               | Acetone                          | 67-64-1   | Yes             | No                                     | No              |
| VOC               | Carbon tetrachloride             | 56-23-5   | Yes             | Yes                                    | Yes             |
| VOC               | Chloroform                       | 67-66-3   | Yes             | Yes                                    | Yes             |
| VOC               | cis-1,2-Dichloroethylene         | 156-59-2  | Yes             | Yes                                    | No              |
| VOC               | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | Yes             | Yes                                    | No              |
| VOC               | Methyl tert-butyl ether          | 1634-04-4 | Yes             | No                                     | No              |
| VOC               | Methylene chloride               | 75-09-2   | Yes             | No                                     | No              |
| VOC               | Tetrachloroethylene              | 127-18-4  | Yes             | Yes                                    | Yes             |
| VOC               | Toluene                          | 108-88-3  | Yes             | No                                     | No              |
| VOC               | Trichloroethylene                | 79-01-6   | Yes             | Yes                                    | Yes             |
| VOC               | Vinyl chloride                   | 75-01-4   | Yes             | Yes                                    | No              |

**Note:**

The COPC list consists of constituents that are identified as a COPC in at least one aquifer. COPCs are identified with a "Yes" and shaded.

**Abbreviations:**

VOC -- Volatile organic compound

TABLE 3.1  
EXPOSURE POINT CONCENTRATION SUMMARY FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater

| T or D | COPC Group | COPC                      | CASRN     | Aquifer-Specific COPC | Maximum Detected Concentration (ug/L) | Qual | 95% UCL (ug/L) | 95% UCL Method                                                                                           | ProUCL Notes | Sample Count | Detect Count | Detection Frequency (%) | Exposure Point Concentration (EPC) |           |                          |
|--------|------------|---------------------------|-----------|-----------------------|---------------------------------------|------|----------------|----------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|-------------------------|------------------------------------|-----------|--------------------------|
|        |            |                           |           |                       |                                       |      |                |                                                                                                          |              |              |              |                         | Value (ug/L)                       | Statistic | Rationale                |
| T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5   | Yes                   | 2.4                                   |      | 0.242          | 95% KM Approximate Gamma UCL                                                                             | k            | 1137         | 59           | 5                       | 0.242                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,1,2-Trichloroethane     | 79-00-5   | Yes                   | 0.29                                  | J    | –              | ProUCL did not calculate, insufficient detects                                                           | d, g         | 1137         | 1            | 0.09                    | 0.29                               | Max       | Lower of UCL and maximum |
| T      | VOC        | 1,1-Dichloroethane        | 75-34-3   | Yes                   | 10.8                                  | J    | 0.125          | ProUCL provided output with no suggested UCL. HDR calculated a non-parametric 95% UCL around the median. |              | 1137         | 50           | 4.4                     | 0.125                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,1-Dichloroethene        | 75-35-4   | Yes                   | 13.6                                  |      | 0.743          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 88           | 8                       | 0.743                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4   | Yes                   | 83.3                                  |      | 1.629          | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 54           | 5                       | 1.629                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2,4-Trichlorobenzene    | 120-82-1  | Yes                   | 6.82                                  | J    | 0.242          | 95% KM (Chebyshev) UCL                                                                                   | e            | 1137         | 2            | 0.18                    | 0.242                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6   | Yes                   | 142                                   |      | –              | ProUCL did not recommend UCL                                                                             | b            | 1137         | 122          | 11                      | 142                                | Max       | Lower of UCL and maximum |
| T      | VOC        | 1,2-Dichloroethane        | 107-06-2  | Yes                   | 14.7                                  |      | 0.447          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 89           | 8                       | 0.447                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2-Dichloropropane       | 78-87-5   | Yes                   | 44                                    | J    | 0.535          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 100          | 9                       | 0.535                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,3,5-Trimethylbenzene    | 108-67-8  | Yes                   | 34.1                                  |      | 0.488          | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 42           | 3.69                    | 0.488                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,4-Dichlorobenzene       | 106-46-7  | Yes                   | 3.67                                  | J    | 0.144          | 95% KM (t) UCL                                                                                           |              | 1137         | 9            | 0.79                    | 0.144                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 2-Hexanone                | 591-78-6  | Yes                   | 122                                   | J    | 3.182          | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 20           | 1.76                    | 3.182                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 4-Isopropyltoluene        | 99-87-6   | Yes                   | 1.44                                  | J    | 0.25           | ProUCL provided output with no suggested UCL. HDR calculated a non-parametric 95% UCL around the median. |              | 1137         | 4            | 0.35                    | 0.25                               | UCL       | Lower of UCL and maximum |
| T      | VOC        | Acetone                   | 67-64-1   | Yes                   | 7,790                                 |      | 242.3          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 870          | 77                      | 242.3                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Benzene                   | 71-43-2   | Yes                   | 6.42                                  | J    | 0.168          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 26           | 2.29                    | 0.168                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Bromodichloromethane      | 75-27-4   | Yes                   | 23                                    | J    | 0.322          | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 6            | 0.53                    | 0.322                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Bromomethane              | 74-83-9   | Yes                   | 29.8                                  | J    | 0.602          | 95% KM (t) UCL                                                                                           | f            | 1137         | 3            | 0.26                    | 0.602                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Carbon tetrachloride      | 56-23-5   | Yes                   | 196                                   |      | 5.068          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 195          | 17                      | 5.068                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Chloroform                | 67-66-3   | Yes                   | 22,100                                |      | 176            | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 370          | 33                      | 176                                | UCL       | Lower of UCL and maximum |
| T      | VOC        | Chloromethane             | 74-87-3   | Yes                   | 74.7                                  | J    | 1.213          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 28           | 2.46                    | 1.213                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | cis-1,2-Dichloroethylene  | 156-59-2  | Yes                   | 323                                   |      | 25.3           | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 907          | 80                      | 25.3                               | UCL       | Lower of UCL and maximum |
| T      | VOC        | Ethylbenzene              | 100-41-4  | Yes                   | 5.04                                  |      | 0.25           | ProUCL provided output with no suggested UCL. HDR calculated a non-parametric 95% UCL around the median. |              | 1137         | 9            | 0.79                    | 0.25                               | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methyl Ethyl Ketone       | 78-93-3   | Yes                   | 20,800                                |      | 657            | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 377          | 33                      | 657                                | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methyl tert-butyl ether   | 1634-04-4 | Yes                   | 78.2                                  |      | 5.482          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 409          | 36                      | 5.482                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methylene chloride        | 75-09-2   | Yes                   | 177                                   | J    | –              | ProUCL did not recommend UCL                                                                             | b            | 1137         | 53           | 5                       | 177                                | Max       | No UCL was recommended   |
| T      | VOC        | Tetrachloroethylene       | 127-18-4  | Yes                   | 300                                   |      | 26.6           | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 830          | 73                      | 26.6                               | UCL       | Lower of UCL and maximum |
| T      | VOC        | Toluene                   | 108-88-3  | Yes                   | 149                                   |      | 1.126          | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 77           | 7                       | 1.126                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Trichloroethylene         | 79-01-6   | Yes                   | 286                                   |      | 13.6           | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 797          | 70                      | 13.6                               | UCL       | Lower of UCL and maximum |
| T      | VOC        | Vinyl chloride            | 75-01-4   | Yes                   | 188                                   |      | 4.629          | 95% KM (Chebyshev) UCL                                                                                   |              | 1137         | 147          | 13                      | 4.629                              | UCL       | Lower of UCL and maximum |
| T      | SVOC       | Naphthalene               | 91-20-3   | Yes                   | 6.94                                  | J    | 0.224          | 95% KM Approximate Gamma UCL                                                                             |              | 1137         | 8            | 1                       | 0.224                              | UCL       | Lower of UCL and maximum |

#### Notes:

These EPCs for groundwater will be used in the resident and worker scenarios. Only unfiltered (total) groundwater data are evaluated.  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.  
The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B.  
For instances where ProUCL provided an output, but did not provide a suggested UCL, HDR calculated a non-parametric 95% UCL around the median or 50% percentile in accordance with the 2009 USEPA Unified Guidance Section 21.2. See Attachment B.

#### Abbreviations:

COPC -- Constituent of potential concern  
EPC -- Exposure point concentration  
Qual -- Qualifier  
NA -- Not analyzed or applicable  
ND -- Not detected  
UCL -- 95% Upper confidence limit

#### ProUCL Notes and Warnings:

b One or more recommended UCL not available.  
d Data set has only 1 Distinct Detected Values.  
e Data set has only 2 Detected Values.  
f Data set has only 3 Detected Values.  
g The data set was not processed.  
k The 95% KM Approximate Gamma UCL was chosen as the GROS UCL may yield incorrect UCLs when the data data set has greater than 50% nondetects.

#### References:

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. EPA 530-R-09-007. March.  
USEPA. 2016. ProUCL Version 5.1. September 19. Available online: <https://www.epa.gov/land-research/proocl-software>  
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: <https://www.epa.gov/land-research/proocl-version-5100-documentation-downloads>

TABLE 3.2  
EXPOSURE POINT CONCENTRATION SUMMARY FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater

| T or D | COPC Group | COPC                      | CASRN    | Aquifer-Specific COPC | Maximum Detected Concentration (ug/L) | Qual | 95% UCL (ug/L) | 95% UCL Method                                 | ProUCL Notes | Sample Count | Detect Count | Detection Frequency (%) | Exposure Point Concentration (EPC) |           |                        |
|--------|------------|---------------------------|----------|-----------------------|---------------------------------------|------|----------------|------------------------------------------------|--------------|--------------|--------------|-------------------------|------------------------------------|-----------|------------------------|
|        |            |                           |          |                       |                                       |      |                |                                                |              |              |              |                         | Value (ug/L)                       | Statistic | Rationale              |
| T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  | Yes                   | 0.538                                 |      | 0.208          | 95% KM (t) UCL                                 |              | 244          | 13           | 5                       | 0.208                              | UCL       | Lower of max and UCL   |
| T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | Yes                   | 0.232                                 | J    | --             | ProUCL did not calculate; insufficient detects | d, g         | 244          | 1            | 0.4                     | 0.232                              | Max       | No UCL was recommended |
| T      | VOC        | Carbon tetrachloride      | 56-23-5  | Yes                   | 1.19                                  |      | 0.387          | 95% KM (t) UCL                                 | I            | 244          | 75           | 31                      | 0.387                              | UCL       | Lower of max and UCL   |
| T      | VOC        | Chloroform                | 67-66-3  | Yes                   | 11                                    |      | 2.07           | 95% KM (Chebyshev) UCL                         |              | 244          | 135          | 55                      | 2.07                               | UCL       | Lower of max and UCL   |
| T      | VOC        | cis-1,2-Dichloroethylene  | 156-59-2 | Yes                   | 27.6                                  |      | 3.532          | 95% KM (Chebyshev) UCL                         |              | 244          | 120          | 49                      | 3.532                              | UCL       | Lower of max and UCL   |
| T      | VOC        | Methyl Ethyl Ketone       | 78-93-3  | Yes                   | 2,910                                 |      | 108.5          | 95% KM (t) UCL                                 |              | 244          | 11           | 5                       | 108.5                              | UCL       | Lower of max and UCL   |
| T      | VOC        | Tetrachloroethylene       | 127-18-4 | Yes                   | 127                                   |      | 20.94          | 95% KM (Chebyshev) UCL                         |              | 244          | 203          | 83                      | 20.94                              | UCL       | Lower of max and UCL   |
| T      | VOC        | Trichloroethylene         | 79-01-6  | Yes                   | 37.1                                  |      | 9.077          | KM H-UCL                                       |              | 244          | 200          | 82                      | 9.077                              | UCL       | Lower of max and UCL   |
| T      | VOC        | Vinyl chloride            | 75-01-4  | Yes                   | 7.98                                  | J    | 0.534          | 95% KM (Chebyshev) UCL                         |              | 244          | 22           | 9                       | 0.534                              | UCL       | Lower of max and UCL   |

**Notes:**

These EPCs for groundwater will be used in the resident and worker scenarios. Only unfiltered (total) groundwater data are evaluated.  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.  
The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B.

**Abbreviations:**

COPC -- Constituent of potential concern  
EPC -- Exposure point concentration  
Qual -- Qualifier  
NA -- Not analyzed or applicable  
ND -- Not detected  
UCL -- 95% Upper confidence limit

**References:**

USEPA. 2016. ProUCL Version 5.1. September 19. Available online: <https://www.epa.gov/land-research/procl-software>  
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: <https://www.epa.gov/land-research/procl-version-5100-documentation-downloads>

**ProUCL Notes and Warnings:**

- d Data set has only 1 Distinct Detected Values.
- g The data set was not processed.
- I The 95% KM (t) UCL was chosen as it is more appropriate than the 95% KM (BCA) UCL and KM H-UCL.



TABLE 3.3  
EXPOSURE POINT CONCENTRATION SUMMARY FOR GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater

| T or D | COPC Group | COPC                 | CASRN    | Aquifer-Specific COPC | Maximum Detected Concentration (ug/L) | Qual | 95% UCL (ug/L) | 95% UCL Method            | ProUCL Notes | Sample Count | Detect Count | Detection Frequency (%) | Exposure Point Concentration (EPC) |           |                      |
|--------|------------|----------------------|----------|-----------------------|---------------------------------------|------|----------------|---------------------------|--------------|--------------|--------------|-------------------------|------------------------------------|-----------|----------------------|
|        |            |                      |          |                       |                                       |      |                |                           |              |              |              |                         | Value (ug/L)                       | Statistic | Rationale            |
| T      | VOC        | Carbon tetrachloride | 56-23-5  | Yes                   | 1.15                                  |      | 0.681          | 95% KM (t) UCL            |              | 21           | 14           | 67                      | 0.681                              | UCL       | Lower of max and UCL |
| T      | VOC        | Chloroform           | 67-66-3  | Yes                   | 0.295                                 | J    | 0.206          | 95% KM (t) UCL            |              | 21           | 15           | 71                      | 0.206                              | UCL       | Lower of max and UCL |
| T      | VOC        | Tetrachloroethylene  | 127-18-4 | Yes                   | 10.9                                  |      | 3.702          | 95% KM Adjusted Gamma UCL | k            | 21           | 15           | 71                      | 3.702                              | UCL       | Lower of max and UCL |
| T      | VOC        | Trichloroethylene    | 79-01-6  | Yes                   | 3.15                                  |      | 2.019          | 95% Student's-t UCL       |              | 21           | 21           | 100                     | 2.019                              | UCL       | Lower of max and UCL |

**Notes:**

These EPCs for groundwater will be used in the resident and worker scenarios. Only unfiltered (total) groundwater data are evaluated.

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.

The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B.

**Abbreviations:**

COPC -- Constituent of potential concern

EPC -- Exposure point concentration

Qual -- Qualifier

NA -- Not analyzed or applicable

ND -- Not detected

UCL -- 95% Upper confidence limit

**References:**

USEPA. 2016. ProUCL Version 5.1. September 19. Available online: <https://www.epa.gov/land-research/proucl-software>

USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: <https://www.epa.gov/land-research/proucl-version-5100-documentation-downloads>

**ProUCL Notes and Warnings:**

k The 95% KM Approximate Gamma UCL was chosen as the GROS UCL may yield incorrect UCLs when the data data set has greater than 50% nondetects.

TABLE 4.1  
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR GROUNDWATER  
REASONABLE MAXIMUM EXPOSURE  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                     |                  |
|---------------------|------------------|
| Scenario Timeframe: | Current / Future |
| Medium:             | Groundwater      |
| Exposure Medium:    | Groundwater      |

| Exposure Route | Receptor Population | Receptor Age      | Exposure Point | Parameter Code | Parameter Definition                       | Value             | Units                     | Rationale / Reference       | Intake Equation / Model Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------------------|-------------------|----------------|----------------|--------------------------------------------|-------------------|---------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ingestion      | Worker              | Adult             | Tap Water      | AT             | Averaging Time-cancer                      | 25550             | days                      | USEPA 2011                  | $\text{Intake (mg/kg-day)} = (\text{CW} \times \text{IR} \times \text{CF} \times \text{EF} \times \text{ED}) / (\text{BW} \times \text{AT})$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                |                     |                   |                | AT             | Averaging Time-noncancer                   | 9125              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | BW             | Body Weight                                | 80                | kg                        | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CF             | Conversion Factor                          | 0.001             | mg/μg                     | —                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CW             | Chemical Concentration in Water            | EPC               | μg/L                      | —                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | ED             | Exposure Duration                          | 25                | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | EF             | Exposure Frequency                         | 250               | days/yr                   | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | IR             | Ingestion Rate                             | 1.25              | L/day                     | USEPA 2014 FAQs             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                | Resident            | Adult             | Tap Water      | AT             | Averaging Time-cancer                      | 25550             | days                      | USEPA 2011                  | For noncancer, $\text{Intake (mg/kg-day)} = (\text{CW} \times \text{IR} \times \text{CF} \times \text{EF} \times \text{ED}) / (\text{BW} \times \text{AT})$ , separately for adult and child using IR-adult or IR-child.<br><br>For cancer, the ingestion rate was calculated for an adult (birth - 26 yrs), adjusting for age-specific exposure factors, where $\text{IR-Adj} = \sum (\text{ED} \times \text{IR}) / \text{BW}$ .<br><br>$\text{Intake (mg/kg-day)} = (\text{CW} \times (\text{IR-Adj-adult} + \text{IR-Adj-child}) \times \text{CF} \times \text{EF}) / \text{AT}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                |                     |                   |                | AT             | Averaging Time-noncancer                   | 7300              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | BW             | Body Weight                                | 80                | kg                        | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CF             | Conversion Factor                          | 0.001             | mg/μg                     | —                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CW             | Chemical Concentration in Water            | EPC               | μg/L                      | Calculated - Table 3.1      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | ED             | Exposure Duration                          | 20                | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | EF             | Exposure Frequency                         | 350               | days/yr                   | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | IR-adult       | Ingestion Rate                             | 2.5               | L/day                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | IR-Adj-adult   | Ingestion Rate Age-Adjusted                | 0.7               | L-yr/day-kg               | Calculated - Table 4.Supp.1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | IR-Adj-6-16    | Ingestion Rate Age-Adjusted MMOA 6-<16     | 1.1               | L-yr/day-kg               | Calculated - Table 4.Supp.2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | IR-Adj-16-26   | Ingestion Rate Age-Adjusted MMOA 16-<26    | 0.33              | L-yr/day-kg               | Calculated - Table 4.Supp.2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CAFo           | TCE Cancer Adjustment Factor-oral          | 0.804             | unitless                  | USEPA RSL Equations         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | MAFo           | TCE Mutagen Adjustment Factor-oral         | 0.202             | unitless                  | USEPA RSL Equations         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     | Child (0-6 years) | Tap Water      | AT             | Averaging Time-cancer                      | 25550             | days                      | USEPA 2011                  | For TCE cancer, the intake (mg/kg-day) = $(\text{CW} \times [\text{CAF} \times (\text{IR-Adj-adult} + \text{IR-Adj-child}) + \text{MAF} \times (\text{IR-Adj-0-2} + \text{IR-Adj-2-6} + \text{IR-Adj-6-16} + \text{IR-Adj-16-26})] \times \text{EF} \times \text{CF}) / \text{AT}$ .<br>Adult intake equation is aggregate of child and adult age ranges.<br><br>For VC cancer, the intake (mg/kg-day) = $\text{CW} \times \text{CF} \times [(\text{EF} \times (\text{IR-Adj-adult} + \text{IR-Adj-child}) / \text{AT}) + (\text{IR-child} / \text{BW-child})]$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | AT             | Averaging Time-noncancer                   | 2190              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | BW             | Body Weight                                | 15                | kg                        | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CF             | Conversion Factor                          | 0.001             | mg/μg                     | —                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CW             | Chemical Concentration in Water            | EPC               | μg/L                      | Calculated - Table 3.1      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | ED             | Exposure Duration                          | 6                 | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Dermal         | Worker              | Adult             | Tap Water      | AT             | Averaging Time-cancer                      | 25550             | days                      | USEPA 2011                  | Dermally Absorbed Dose (mg/kg-day) = $(\text{DA-event} \times \text{EV} \times \text{SA} \times \text{EF} \times \text{ED}) / (\text{BW} \times \text{AT})$<br><br>where for organic compounds,<br>if $t\text{-event} \leq t^*$ : $\text{DA-event (mg/cm}^2\text{-event)} = 2 \times \text{FA} \times \text{Kp} \times \text{Cw} \times (\text{sqrt}((6 \times \text{revent} \times \text{tevent}) / (\pi))) \times \text{CF1} \times \text{CF2}$ , where $\text{CF1} = 0.001 \text{ mg/ug}$ and $\text{CF2} = 0.001 \text{ L/cm}^3$<br><br>OR if $t\text{-event} > t^*$ : $\text{DAevent (mg/cm}^2\text{-event)} = \text{FA} \times \text{Kp} \times \text{CW} \times (t\text{-event} / ((1+B) + 2 \times \text{revent} \times ((1 + 3B + 3B^2) / (1+B)^2))) \times \text{CF1} \times \text{CF2}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                | AT             | Averaging Time-noncancer                   | 9125              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | B              | coefficient across the viable epidermis    | Chemical-specific | —                         | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | BW             | Body Weight                                | 80                | kg                        | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CW             | Chemical Concentration in Water            | EPC               | μg/L                      | —                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | DA-event       | Dermally Absorbed Dose per Event           | Calculated        | mg/cm <sup>2</sup> -event | Calculated                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | t-event        | Event Time                                 | 1                 | hr/event                  | Professional judgment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | EV             | Event Frequency                            | 1                 | events/day                | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | EF             | Exposure Frequency                         | 250               | days/yr                   | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | ED             | Exposure Duration                          | 25                | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | FA             | Fraction Absorbed Water                    | Chemical-specific | —                         | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | Kp             | Permeability Constant                      | Chemical-specific | cm/hr                     | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | SA             | Skin Surface Area Available for Contact    | 3527              | cm <sup>2</sup>           | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | tau-event      | Lag time per event                         | Chemical-specific | hr/event                  | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                | Resident            | Adult             | Tap Water      | AT             | Averaging Time-cancer                      | 25550             | days                      | USEPA 2011                  | For noncancer, Dermal Absorbed Dose (DAD) (mg/kg-day) = $(\text{DA-event} \times \text{EV} \times \text{SA} \times \text{EF} \times \text{ED}) / (\text{BW} \times \text{AT})$ . Separate calculations are performed for adult and child using SA-adult or SA-child.<br><br>where for organic compounds,<br>if $t\text{-event} \leq t^*$ : $\text{DA-event (mg/cm}^2\text{-event)} = 2 \times \text{FA} \times \text{Kp} \times \text{Cw} \times (\text{sqrt}((6 \times \text{revent} \times \text{tevent}) / (\pi))) \times \text{CF1} \times \text{CF2}$ , where $\text{CF1} = 0.001 \text{ mg/ug}$ and $\text{CF2} = 0.001 \text{ L/cm}^3$<br><br>OR if $t\text{-event} > t^*$ : $\text{DAevent (mg/cm}^2\text{-event)} = \text{FA} \times \text{Kp} \times \text{CW} \times (t\text{-event} / ((1+B) + 2 \times \text{revent} \times ((1 + 3B + 3B^2) / (1+B)^2))) \times \text{CF1} \times \text{CF2}$<br><br>For cancer, the DAD was calculated for an adult (birth - 26 yrs), adjusting for age-specific exposure factors, where $\text{SA-Adj} = \sum (\text{ED} \times \text{SA}) / \text{BW}$ .<br><br>$(\text{DAD}) (\text{mg/kg-day}) = ((\text{DA-event-adult} \times \text{SA-Adj-adult} + \text{DA-event-child} \times \text{SA-Adj-child}) \times \text{EV} \times \text{EF}) / \text{AT}$ |
|                |                     |                   |                | AT             | Averaging Time-noncancer                   | 7300              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | B              | coefficient across the viable epidermis    | Chemical-specific | —                         | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | BW             | Body Weight                                | 80                | kg                        | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CW             | Chemical Concentration in Water            | EPC               | μg/L                      | Calculated - Table 3.1      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | DA-event-adult | Dermally Absorbed Dose per Event           | Calculated        | mg/cm <sup>2</sup> -event | Calculated - Table 4.Supp.3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | t-event        | Event Time                                 | 0.71              | hr/event                  | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | EV             | Event Frequency                            | 1                 | events/day                | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | EF             | Exposure Frequency                         | 350               | days/year                 | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | ED             | Exposure Duration                          | 20                | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | FA             | Fraction Absorbed Water                    | Chemical-specific | —                         | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | Kp             | Permeability Constant                      | Chemical-specific | cm/hr                     | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | SA-adult       | Skin Surface Area Available for Contact    | 19652             | cm <sup>2</sup>           | USEPA 2014 - See Notes      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | SA-Adj-adult   | Skin Surface Area Age-Adjusted             | 5508              | cm <sup>2</sup> -yr/kg    | Calculated - Table 4.Supp.1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | SA-Adj-6-16    | Skin Surface Area Age-Adjusted MMOA 6-<16  | 9293              | cm <sup>2</sup> -yr/kg    | Calculated - Table 4.Supp.2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | SA-Adj-16-26   | Skin Surface Area Age-Adjusted MMOA 16-<26 | 2410              | cm <sup>2</sup> -yr/kg    | Calculated - Table 4.Supp.2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | tau-event      | Lag time per event                         | Chemical-specific | hr/event                  | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | CAFo           | TCE Cancer Adjustment Factor-oral          | 0.804             | unitless                  | USEPA RSL Equations         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                |                     |                   |                | MAFo           | TCE Mutagen Adjustment Factor-oral         | 0.202             | unitless                  | USEPA RSL Equations         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

TABLE 4.1  
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR GROUNDWATER  
REASONABLE MAXIMUM EXPOSURE  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                     |                  |
|---------------------|------------------|
| Scenario Timeframe: | Current / Future |
| Medium:             | Groundwater      |
| Exposure Medium:    | Groundwater      |

| Exposure Route | Receptor Population | Receptor Age      | Exposure Point               | Parameter Code | Parameter Definition                                                                                                                             | Value             | Units                     | Rationale / Reference       | Intake Equation / Model Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|---------------------|-------------------|------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dermal         | Resident            | Child (0-6 years) | Tap Water                    | AT             | Averaging Time-cancer                                                                                                                            | 25550             | days                      | USEPA 2011                  | Continued from above:<br><br>For MMOA cancer, the IR-Adj was weighted for each age bin using ADAFs, where 0-<2 yrs applied an ADAF of 10, 2-<6 yrs applied an ADAF of 3, 6-<16 yrs applied an ADAF of 3, and 6-26 yrs applied and ADAF of 1.For<br><br>TCE cancer, the DAD (mg/kg-day) =<br>((CAFo x (DA-event-adult x SA-Adj-adult + DA-event-child x SA-Adj-child) + MAFo x (DA-event-adult x (SA-Adj-6-16 + SA-Adj-16-26) + DA-event-child x (SA-Adj-0-2 + SA-Adj-2-6))) x EV x EF) / AT<br>Adult intake equation is aggregate of child and adult age ranges.<br><br>For VC cancer, the DAD (mg/kg-day) =<br>(EV x EF x (DA-event-adult x SA-Adj-adult + DA-event-child x SA-Adj-child) / AT) + (DA-event-child x (EV x SA-child / BW-child))                                                                                                                                                                                                                                                                                                                        |
|                |                     |                   |                              | AT             | Averaging Time-noncancer                                                                                                                         | 2190              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | B              | Ratio of permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis | Chemical-specific | --                        | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | BW             | Body Weight                                                                                                                                      | 15                | kg                        | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CW             | Chemical Concentration in Water                                                                                                                  | EPC               | µg/L                      | Calculated - Table 3.1      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | DA-event-child | Dermally Absorbed Dose per Event                                                                                                                 | Calculated        | mg/cm <sup>2</sup> -event | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | t-event        | Event Time                                                                                                                                       | 0.54              | hr/event                  | Calculated - Table 4.Supp.3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | EV             | Event Frequency                                                                                                                                  | 1                 | events/day                | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | EF             | Exposure Frequency                                                                                                                               | 350               | days/year                 | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | ED             | Exposure Duration                                                                                                                                | 6                 | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | FA             | Fraction Absorbed Water                                                                                                                          | Chemical-specific | --                        | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | Kp             | Permeability Constant                                                                                                                            | Chemical-specific | cm/hr                     | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | SA-child       | Skin Surface Area Available for Contact                                                                                                          | 6365              | cm <sup>2</sup>           | USEPA 2014 - See Notes      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | SA-Adj-child   | Skin Surface Area Age-Adjusted                                                                                                                   | 2649              | cm <sup>2</sup> -yr/kg    | Calculated - Table 4.Supp.1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | SA-Adj-0-2     | Skin Surface Area Age-Adjusted MMOA 0-<2                                                                                                         | 9814              | cm <sup>2</sup> -yr/kg    | Calculated - Table 4.Supp.2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | SA-Adj-2-6     | Skin Surface Area Age-Adjusted MMOA 2-<6                                                                                                         | 5004              | cm <sup>2</sup> -yr/kg    | Calculated - Table 4.Supp.2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | tau-event      | Lag time per event                                                                                                                               | Chemical-specific | hr/event                  | USEPA 2004                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Inhalation     | Resident            | Adult             | Water Vapors in Bathroom Air | AT             | Averaging Time-cancer                                                                                                                            | 25550             | days                      | USEPA 2011                  | The Andelman shower model as modified by Schaum et al. calculates chemical concentrations in air using chemical concentrations in water; the model is applied to VOCs only.<br><br>For noncancer, Exposure Concentration (EC) (mg/m <sup>3</sup> ) = (CA x ET x ED x EF x CF) / AT, separately for adult and child using CA-adult or CA-child.<br><br>For cancer, EC (mg/m <sup>3</sup> ) = ((CA-adult x ET-adult x ED-adult + CA-child x ET-child x ED-child) x EF x CF) / AT<br><br>For MMOA cancer, EC (mg/m <sup>3</sup> ) = ((CA-adult x ET-adult + CA-child x ET-child) x (ED-0-2 x 10 + ED-2-6 x 3 + ED-6-16 x 3 + ED-16-26 x 1) x EF x CF) / AT<br><br>For TCE cancer, the EC (mg/m <sup>3</sup> ) =<br>((CA-adult x ET-adult + CA-child x ET-child) x (CAFI x ED-adj + MAF x (ED-0-2 x 10 + ED-2-6 x 3 + ED-6-16 x 3 + ED-16-26 x 1)) x EF x CF) / AT<br>Adult intake equation is aggregate of child and adult age ranges.<br><br>For VC cancer, EC (mg/m <sup>3</sup> ) =<br>((CA-adult x ET-adult + CA-child x ET-child) x ED-adj x EF x CF) / AT + CA-child |
|                |                     |                   |                              | AT             | Averaging Time-noncancer                                                                                                                         | 7300              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CW             | Chemical Concentration in Water                                                                                                                  | EPC               | µg/L                      | Calculated - Table 3.1      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CA-adult       | Chemical Concentration in Air from Shower                                                                                                        | Calculated        | mg/m <sup>3</sup>         | Calculated - Table 4.Supp.4 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CF             | Conversion Factor                                                                                                                                | 0.042             | day/hr                    | 1 day / 24 hours            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | ET             | Exposure Time                                                                                                                                    | 0.71              | hr/day                    | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | EF             | Exposure Frequency                                                                                                                               | 350               | days/year                 | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | ED             | Exposure Duration                                                                                                                                | 20                | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | ED-adj         | TCE Exposure Duration-cancer aggregate                                                                                                           | 26                | years                     | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CAFI           | TCE Cancer Adjustment Factor-inhalation                                                                                                          | 0.756             | unitless                  | USEPA RSL Equations         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | MAFI           | TCE Mutagen Adjustment Factor-inhalation                                                                                                         | 0.244             | unitless                  | USEPA RSL Equations         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     | Child (0-6 years) | Water Vapors in Bathroom Air | AT             | Averaging Time-cancer                                                                                                                            | 25550             | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | AT             | Averaging Time-noncancer                                                                                                                         | 2190              | days                      | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CW             | Chemical Concentration in Water                                                                                                                  | EPC               | µg/L                      | Calculated - Table 3.1      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CA-child       | Chemical Concentration in Air from Shower                                                                                                        | Calculated        | mg/m <sup>3</sup>         | Calculated - Table 4.Supp.4 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | CF             | Conversion Factor                                                                                                                                | 0.042             | day/hr                    | 1 day / 24 hours            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | ET             | Exposure Time                                                                                                                                    | 0.54              | hr/day                    | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | EF             | Exposure Frequency                                                                                                                               | 350               | days/year                 | USEPA 2011                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                     |                   |                              | ED             | Exposure Duration                                                                                                                                | 6                 | years                     | USEPA 2014                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

#### Notes:

Intake equations are derived from USEPA's RSL equations and also taken from USEPA's Risk Assessment Guidance for Superfund (RAGS).  
The skin surface area available for contact is the weighted average of mean values for males and females combined for total surface area, which includes the head, trunk, arms, hands, legs and feet (USEPA 2014).

#### Abbreviations:

Adj -- Adjusted to include both adult and child exposure factors  
DAD -- Dermally absorbed dose  
EC -- Exposure concentration  
EPC -- Exposure point concentration  
RSL -- USEPA Regional Screening Level  
TCE -- Trichloroethylene  
USEPA -- United States Environmental Protection Agency  
VC -- Vinyl chloride

#### References:

USEPA. 1991. Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03. Available online: <http://rais.ornl.gov/documents/OSWERdirective9285.6-03.pdf>  
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USEPA. 2017. Regional Screening Levels Equations. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 4.SUPP.1  
CALCULATION OF AGE-ADJUSTED EXPOSURE FACTORS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                  |                   |                 |                    |                  | Age-Adjusted Exposure Factors |             |                        |
|------------------|-------------------|-----------------|--------------------|------------------|-------------------------------|-------------|------------------------|
| AGE              | Exposure Duration | Body Weight (1) | Intake Rate        |                  | AGE GROUP                     | Intake Rate | Dermal Surface Area    |
|                  |                   |                 | Tap Water IR-W (2) | Tap Water SA (3) |                               | IR-W-Adj    | SA-W-Adj               |
|                  |                   |                 | L/day              | cm <sup>2</sup>  |                               | L-yr/day-kg | cm <sup>2</sup> -yr/kg |
| year             | years             | kg              |                    |                  |                               |             |                        |
| Birth to 1 month | 0.083             | 4.8             | 0.839              | 2,900            | 0-<6 yrs                      | 0.42        | 2,649                  |
| 1 to <3 months   | 0.17              | 5.9             | 0.896              | 3,300            |                               |             |                        |
| 3 to 6 < months  | 0.25              | 7.4             | 1.06               | 3,800            |                               |             |                        |
| 6 to <12 months  | 0.5               | 9.2             | 1.06               | 4,500            |                               |             |                        |
| 1 to < 2 yrs     | 1                 | 11.4            | 0.837              | 5,300            |                               |             |                        |
| 2 to <3 yrs      | 1                 | 13.8            | 0.877              | 6,100            |                               |             |                        |
| 3 to < 6 yrs     | 3                 | 18.6            | 0.959              | 7,600            |                               |             |                        |
| 6 to <11 yrs     | 5                 | 31.8            | 1.32               | 10,800           |                               |             |                        |
| 11 to <16 yrs    | 5                 | 56.8            | 1.82               | 15,900           |                               |             |                        |
| 16 to <18 yrs    | 2                 | 71.6            | 1.78               | 18,400           |                               |             |                        |
| 18 to < 21 yrs   | 3                 | 71.6            | 2.37               | 18,400           | 6-<26 yrs                     | 0.7         | 5,508                  |
| 21 to < 26 yrs   | 5                 | 80              | 2.96               | 18,000           |                               |             |                        |

**Equations:**

$$\text{IR-W-Adj (L-yr/day-kg)} = \sum (\text{ED} * \text{IR-W} / \text{BW})$$

$$\text{SA-W-Adj (cm}^2\text{-yr/kg)} = \sum (\text{ED} * \text{SA-W} / \text{BW})$$

**Note:**

USEPA Risk Assessment Guidance for Superfund (RAGS) Part A recommends applying 95th or 90th percentile values for ingestion rate and exposure duration and applying the mean values for surface area and body weight (Exhibit 6-13 and Section 6.6.1).

**Abbreviations:**

BW -- Body weight  
ED -- Exposure duration  
ET -- Event time

**References:**

- (1) USEPA. 2011. Exposure Factors Handbook. Table 8-1 - Recommended Values for Body Weight. Mean. September. Available online: <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>
  - (2) USEPA. 2011. Exposure Factors Handbook. Table 3-1 - Recommended Values for Drinking Water Ingestion Rates. 95th Percentile, L/day. September. Available online: <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>
  - (3) USEPA. 2011. Exposure Factors Handbook. Table 7-1 - Recommended Values for Total Body Surface Area. Mean value. September. Available online: <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>
- USEPA. 2005. Supplemental Guidance for Assessing Susceptibility from Early Life Exposure to Carcinogens. EPA/630/R-03/003F. March. Available online: [http://www.epa.gov/ttnatw01/childrens\\_supplement\\_final.pdf](http://www.epa.gov/ttnatw01/childrens_supplement_final.pdf)

TABLE 4.SUPP.2  
CALCULATION OF AGE-ADJUSTED EXPOSURE FACTORS FOR COPCS MUTAGENIC MODE OF ACTION FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| AGE              | Exposure Duration | Body Weight (1) | Intake Rate        | Dermal Surface Area | Age-Adjusted Exposure Factors |          |             |                        |
|------------------|-------------------|-----------------|--------------------|---------------------|-------------------------------|----------|-------------|------------------------|
|                  |                   |                 |                    |                     | AGE GROUP                     | ADAF (8) | Intake Rate | Dermal Surface Area    |
|                  |                   |                 | Tap Water IR-W (2) | Tap Water SA (3)    |                               |          | IR-W-Adj    | SA-W-Adj               |
|                  |                   |                 | L/day              | cm <sup>2</sup>     |                               |          | L-yr/day-kg | cm <sup>2</sup> -yr/kg |
| year             | years             | kg              |                    |                     |                               |          |             |                        |
| Birth to 1 month | 0.083             | 4.8             | 0.839              | 2,900               |                               |          |             |                        |
| 1 to <3 months   | 0.17              | 5.9             | 0.896              | 3,300               |                               |          |             |                        |
| 3 to 6 < months  | 0.25              | 7.4             | 1.06               | 3,800               |                               |          |             |                        |
| 6 to <12 months  | 0.5               | 9.2             | 1.06               | 4,500               |                               |          |             |                        |
| 1 to < 2 yrs     | 1                 | 11.4            | 0.837              | 5,300               | 0-<2 yrs                      | 10       | 2.1         | 9,814                  |
| 2 to <3 yrs      | 1                 | 13.8            | 0.877              | 6,100               |                               |          |             |                        |
| 3 to < 6 yrs     | 3                 | 18.6            | 0.959              | 7,600               | 2-<6 yrs                      | 3        | 0.65        | 5,004                  |
| 6 to <11 yrs     | 5                 | 31.8            | 1.32               | 10,800              |                               |          |             |                        |
| 11 to <16 yrs    | 5                 | 56.8            | 1.82               | 15,900              | 6-<16 yrs                     | 3        | 1.1         | 9,293                  |
| 16 to <18 yrs    | 2                 | 71.6            | 1.78               | 18,400              |                               |          |             |                        |
| 18 to < 21 yrs   | 3                 | 71.6            | 2.37               | 18,400              |                               |          |             |                        |
| 21 to < 26 yrs   | 5                 | 80              | 2.96               | 18,000              | 16-<26 yrs                    | 1        | 0.33        | 2,410                  |

**Equations:**

$$\text{IR-W-Adj (L-yr/day-kg)} = \sum (\text{ED} * \text{IR-W} / \text{BW})$$

$$\text{SA-W-Adj (cm}^2\text{-yr/kg)} = \sum (\text{ED} * \text{SA-W} / \text{BW})$$

**Note:**

USEPA Risk Assessment Guidance for Superfund (RAGS) Part A recommends applying 95th or 90th percentile values for ingestion rate and exposure duration and applying the mean values for surface area and body weight (Exhibit 6-13 and Section 6.6.1).

**Abbreviations:**

ADAF -- Age-Dependent Adjustment Factor  
BW -- Body weight  
ED -- Exposure duration  
ET -- Event time

**References:**

- (1) USEPA. 2011. Exposure Factors Handbook. Table 8-1 - Recommended Values for Body Weight. Mean. September. Available online: <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>
- (2) USEPA. 2011. Exposure Factors Handbook. Table 3-1 - Recommended Values for Drinking Water Ingestion Rates. 95th Percentile, L/day. September. Available online: <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>
- (3) USEPA. 2011. Exposure Factors Handbook. Table 7-1 - Recommended Values for Total Body Surface Area. Mean value. September. Available online: <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>
- (8) USEPA. 2005. Supplemental Guidance for Assessing Susceptibility from Early Life Exposure to Carcinogens. EPA/630/R-03/003F. March. Available online: [http://www.epa.gov/ttnatw01/childrens\\_supplement\\_final.pdf](http://www.epa.gov/ttnatw01/childrens_supplement_final.pdf)

TABLE 4.SUPP.3A  
CALCULATION OF DA-EVENT FOR DERMAL EXPOSURE TO GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | Casrn     | EPC<br>(1) | Permeability<br>Coefficient | Ratio of<br>Permeability<br>Coefficients | Lag Time           | Time to Reach<br>Steady State | Fraction<br>Absorbed | Duration of Event<br>(t-event) |                   |                                | DA-event     |     |                |     |                             |     |
|------------|----------------------------------|-----------|------------|-----------------------------|------------------------------------------|--------------------|-------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|--------------|-----|----------------|-----|-----------------------------|-----|
|            |                                  |           | Cw         | K <sub>p</sub>              | B                                        | T <sub>event</sub> | t*                            | FA                   | Worker                         | Resident<br>Adult | Resident<br>Child<br>(0-6 yrs) | Worker       |     | Resident Adult |     | Resident Child<br>(0-6 yrs) |     |
|            |                                  |           | ug/L       | cm/hr                       | unitless                                 | hr/event           | hr                            | unitless             | hr/event                       | hr/event          | hr/event                       | mg/cm2-event | Egn | mg/cm2-event   | Egn | mg/cm2-event                | Egn |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | 0.242      | 0.007                       | 0.035                                    | 0.92               | 2.20                          | 1                    | 1                              | 0.71              | 0.54                           | 4.4E-09      | 2   | 3.7E-09        | 2   | 3.3E-09                     | 2   |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | 0.743      | 0.0117                      | 0.044                                    | 0.37               | 0.88                          | 1                    | 1                              | 0.71              | 0.54                           | 1.5E-08      | 3   | 1.2E-08        | 2   | 1.1E-08                     | 2   |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | 1.629      | 0.008                       | 0.035                                    | 0.70               | 1.69                          | 1                    | 1                              | 0.71              | 0.54                           | 2.8E-08      | 2   | 2.4E-08        | 2   | 2.1E-08                     | 2   |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | 142        | 0.086                       | 0.36                                     | 0.50               | 1.19                          | 1                    | 1                              | 0.71              | 0.54                           | 2.4E-05      | 2   | 2.0E-05        | 2   | 1.7E-05                     | 2   |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | 0.447      | 0.004                       | 0.02                                     | 0.38               | 0.90                          | 1                    | 1                              | 0.71              | 0.54                           | 3.3E-09      | 3   | 2.7E-09        | 2   | 2.3E-09                     | 2   |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | 0.535      | 0.0075                      | 0.031                                    | 0.45               | 1.08                          | 1                    | 1                              | 0.71              | 0.54                           | 7.5E-09      | 2   | 6.3E-09        | 2   | 5.5E-09                     | 2   |
| VOC        | Acetone                          | 67-64-1   | 242.3      | 0.001                       | 0.00                                     | 0.22               | 0.53                          | 1                    | 1                              | 0.71              | 0.54                           | 1.8E-07      | 3   | 1.4E-07        | 3   | 1.2E-07                     | 3   |
| VOC        | Carbon tetrachloride             | 56-23-5   | 5.068      | 0.01630                     | 0.0778                                   | 0.76               | 1.83                          | 1                    | 1                              | 0.71              | 0.54                           | 2.0E-07      | 2   | 1.7E-07        | 2   | 1.5E-07                     | 2   |
| VOC        | Chloroform                       | 67-66-3   | 176        | 0.007                       | 0.029                                    | 0.49               | 1.18                          | 1                    | 1                              | 0.71              | 0.54                           | 2.3E-06      | 2   | 2.0E-06        | 2   | 1.7E-06                     | 2   |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | 25.3       | 0.011                       | 0.04                                     | 0.37               | 0.88                          | 1                    | 1                              | 0.71              | 0.54                           | 4.8E-07      | 3   | 3.9E-07        | 2   | 3.4E-07                     | 2   |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | 657        | 0.0010                      | 0.003                                    | 0.27               | 0.64                          | 1                    | 1                              | 0.71              | 0.54                           | 9.7E-07      | 3   | 7.9E-07        | 3   | 6.6E-07                     | 2   |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | 5.482      | 0.002                       | 0.008                                    | 0.33               | 0.79                          | 1                    | 1                              | 0.71              | 0.54                           | 1.9E-08      | 3   | 1.5E-08        | 2   | 1.3E-08                     | 2   |
| VOC        | Methylene chloride               | 75-09-2   | 177        | 0.004                       | 0.01                                     | 0.31               | 0.75                          | 1                    | 1                              | 0.71              | 0.54                           | 1.0E-06      | 3   | 8.2E-07        | 2   | 7.1E-07                     | 2   |
| VOC        | Tetrachloroethylene              | 127-18-4  | 26.6       | 0.033                       | 0.17                                     | 0.89               | 2.14                          | 1                    | 1                              | 0.71              | 0.54                           | 2.3E-06      | 2   | 2.0E-06        | 2   | 1.7E-06                     | 2   |
| VOC        | Toluene                          | 108-88-3  | 1.126      | 0.0311                      | 0.11                                     | 0.35               | 0.83                          | 1                    | 1                              | 0.71              | 0.54                           | 5.8E-08      | 3   | 4.8E-08        | 2   | 4.2E-08                     | 2   |
| VOC        | Trichloroethylene                | 79-01-6   | 13.6       | 0.0116                      | 0.051                                    | 0.57               | 1.37                          | 1                    | 1                              | 0.71              | 0.54                           | 3.3E-07      | 2   | 2.8E-07        | 2   | 2.4E-07                     | 2   |
| VOC        | Vinyl chloride                   | 75-01-4   | 4.629      | 0.008                       | 0.03                                     | 0.24               | 0.57                          | 1                    | 1                              | 0.71              | 0.54                           | 5.7E-08      | 3   | 4.6E-08        | 3   | 3.8E-08                     | 2   |

|                                                                         |                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equations:</b>                                                       |                                                                                                                                                                                                                                              |
| Inorganics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 1) | DA <sub>event</sub> =<br>K <sub>p</sub> x C <sub>w</sub> x t <sub>event</sub> x CF1 x CF2<br>where CF1 = 0.001 mg/ug and CF2 = 0.001 L/cm <sup>3</sup>                                                                                       |
| Organics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 2)   | t <sub>event</sub> ≤ t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>2 x FA x K <sub>p</sub> x C <sub>w</sub> x (sqrt((6 x t <sub>event</sub> x t <sub>event</sub> ) / (π))) x CF1 x CF2                                            |
| (Eq 3)                                                                  | t <sub>event</sub> > t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>FA x K <sub>p</sub> x C <sub>w</sub> x (t <sub>event</sub> / ((1+B) + 2 x t <sub>event</sub> x ((1 + 3B + 3B <sup>2</sup> )/(1+B) <sup>2</sup> ))) x CF1 x CF2 |

**Note:**  
(1) The EPC is the lower of the 95% upper confidence limit and maximum detected concentration. See Table 3s.  
The dermal parameters were taken from the chemical parameter table of the USEPA June 2017 RSL tables and RAGS Part E.

**Abbreviations:**  
CF1 -- Conversion Factor 1 (0.001 mg/ug)  
CF2 -- Conversion Factor 2 (0.001 L/cm<sup>3</sup>)  
C<sub>w</sub> -- Groundwater or surface water concentration  
VOC -- Volatile organic compound

**Reference:**  
USEPA. 2004. Risk Assessment Guidance for Superfund (RAGS) Volume I: Human Health Evaluation Manual. Part E Supplemental Guidance for Dermal Risk Assessment. Final. USEPA/540/R/99/005. July. Available online: <https://www.epa.gov/risk/risk->  
USEPA. 2017. Regional Screening Levels Generic Tables. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 4.SUPP.3B  
CALCULATION OF DA-EVENT FOR DERMAL EXPOSURE TO GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                            | Casrn    | EPC<br>(1) | Permeability<br>Coefficient | Ratio of<br>Permeability<br>Coefficients | Lag Time           | Time to Reach<br>Steady State | Fraction<br>Absorbed | Duration of Event<br>(t-event) |                   |                                | DA-event     |     |                |     |                             |     |
|------------|---------------------------------|----------|------------|-----------------------------|------------------------------------------|--------------------|-------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|--------------|-----|----------------|-----|-----------------------------|-----|
|            |                                 |          | Cw         | K <sub>p</sub>              | B                                        | T <sub>event</sub> | t*                            | FA                   | Worker                         | Resident<br>Adult | Resident<br>Child<br>(0-6 yrs) | Worker       |     | Resident Adult |     | Resident Child<br>(0-6 yrs) |     |
|            |                                 |          | ug/L       | cm/hr                       | unitless                                 | hr/event           | hr                            | unitless             | hr/event                       | hr/event          | hr/event                       | mg/cm2-event | Eqn | mg/cm2-event   | Eqn | mg/cm2-event                | Eqn |
| VOC        | 1,1,2,2-Tetrachloroethane       | 79-34-5  | 0.208      | 0.007                       | 0.035                                    | 0.92               | 2.20                          | 1                    | 1                              | 0.71              | 0.54                           | 3.8E-09      | 2   | 3.2E-09        | 2   | 2.8E-09                     | 2   |
| VOC        | Carbon tetrachloride            | 56-23-5  | 0.387      | 0.01630                     | 0.0778                                   | 0.76               | 1.83                          | 1                    | 1                              | 0.71              | 0.54                           | 1.5E-08      | 2   | 1.3E-08        | 2   | 1.1E-08                     | 2   |
| VOC        | Chloroform                      | 67-66-3  | 2.07       | 0.007                       | 0.029                                    | 0.49               | 1.18                          | 1                    | 1                              | 0.71              | 0.54                           | 2.7E-08      | 2   | 2.3E-08        | 2   | 2.0E-08                     | 2   |
| VOC        | cis-1,2-Dichloroethylene        | 156-59-2 | 3.532      | 0.011                       | 0.04                                     | 0.37               | 0.88                          | 1                    | 1                              | 0.71              | 0.54                           | 6.7E-08      | 3   | 5.5E-08        | 2   | 4.8E-08                     | 2   |
| VOC        | Methyl Ethyl Ketone (2-butanol) | 78-93-3  | 108.5      | 0.0010                      | 0.003                                    | 0.27               | 0.64                          | 1                    | 1                              | 0.71              | 0.54                           | 1.6E-07      | 3   | 1.3E-07        | 3   | 1.1E-07                     | 2   |
| VOC        | Tetrachloroethylene             | 127-18-4 | 20.94      | 0.033                       | 0.17                                     | 0.89               | 2.14                          | 1                    | 1                              | 0.71              | 0.54                           | 1.8E-06      | 2   | 1.5E-06        | 2   | 1.3E-06                     | 2   |
| VOC        | Trichloroethylene               | 79-01-6  | 9.077      | 0.0116                      | 0.051                                    | 0.57               | 1.37                          | 1                    | 1                              | 0.71              | 0.54                           | 2.2E-07      | 2   | 1.9E-07        | 2   | 1.6E-07                     | 2   |
| VOC        | Vinyl chloride                  | 75-01-4  | 0.534      | 0.008                       | 0.03                                     | 0.24               | 0.57                          | 1                    | 1                              | 0.71              | 0.54                           | 6.5E-09      | 3   | 5.3E-09        | 3   | 4.4E-09                     | 2   |

|                                                                         |                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equations:</b>                                                       |                                                                                                                                                                                                                                              |
| Inorganics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 1) | DA <sub>event</sub> =<br>K <sub>p</sub> x C <sub>w</sub> x t <sub>event</sub> x CF1 x CF2<br>where CF1 = 0.001 mg/ug and CF2 = 0.001 L/cm <sup>3</sup>                                                                                       |
| Organics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 2)   | t <sub>event</sub> ≤ t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>2 x FA x K <sub>p</sub> x C <sub>w</sub> x (sqrt((6 x t <sub>event</sub> x t <sub>event</sub> ) / (π))) x CF1 x CF2                                            |
| (Eq 3)                                                                  | t <sub>event</sub> > t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>FA x K <sub>p</sub> x C <sub>w</sub> x (t <sub>event</sub> / ((1+B) + 2 x t <sub>event</sub> x ((1 + 3B + 3B <sup>2</sup> )/(1+B) <sup>2</sup> ))) x CF1 x CF2 |

**Note:**  
(1) The EPC is the lower of the 95% upper confidence limit and maximum detected concentration. See Table 3s.  
The dermal parameters were taken from the chemical parameter table of the USEPA June 2017 RSL tables and RAGS Part E.

**Abbreviations:**  
CF1 -- Conversion Factor 1 (0.001 mg/ug)  
CF2 -- Conversion Factor 2 (0.001 L/cm<sup>3</sup>)  
C<sub>w</sub> -- Groundwater or surface water concentration  
VOC -- Volatile organic compound

**Reference:**  
USEPA. 2004. Risk Assessment Guidance for Superfund (RAGS) Volume I: Human Health Evaluation Manual. Part E Supplemental Guidance for Dermal Risk Assessment. Final. USEPA/540/R/99/005. July. Available online: <https://www.epa.gov/risk/risk->  
USEPA. 2017. Regional Screening Levels Generic Tables. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>



TABLE 4.SUPP.3C  
CALCULATION OF DA-EVENT FOR DERMAL EXPOSURE TO GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                 | Casm     | EPC<br>(1) | Permeability<br>Coefficient | Ratio of<br>Permeability<br>Coefficients | Lag Time           | Time to Reach<br>Steady State | Fraction<br>Absorbed | Duration of Event<br>(t-event) |                   |                                | DA-event     |     |                |     |                             |     |
|------------|----------------------|----------|------------|-----------------------------|------------------------------------------|--------------------|-------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|--------------|-----|----------------|-----|-----------------------------|-----|
|            |                      |          | Cw         | K <sub>p</sub>              | B                                        | T <sub>event</sub> | t*                            | FA                   | Worker                         | Resident<br>Adult | Resident<br>Child<br>(0-6 yrs) | Worker       |     | Resident Adult |     | Resident Child<br>(0-6 yrs) |     |
|            |                      |          | ug/L       | cm/hr                       | unitless                                 | hr/event           | hr                            | unitless             | hr/event                       | hr/event          | hr/event                       | mg/cm2-event | Egn | mg/cm2-event   | Egn | mg/cm2-event                | Egn |
| VOC        | Carbon tetrachloride | 56-23-5  | 0.681      | 0.01630                     | 0.0778                                   | 0.76               | 1.83                          | 1                    | 1                              | 0.71              | 0.54                           | 2.7E-08      | 2   | 2.3E-08        | 2   | 2.0E-08                     | 2   |
| VOC        | Chloroform           | 67-66-3  | 0.206      | 0.007                       | 0.029                                    | 0.49               | 1.18                          | 1                    | 1                              | 0.71              | 0.54                           | 2.7E-09      | 2   | 2.3E-09        | 2   | 2.0E-09                     | 2   |
| VOC        | Tetrachloroethylene  | 127-18-4 | 3.702      | 0.033                       | 0.17                                     | 0.89               | 2.14                          | 1                    | 1                              | 0.71              | 0.54                           | 3.2E-07      | 2   | 2.7E-07        | 2   | 2.4E-07                     | 2   |
| VOC        | Trichloroethylene    | 79-01-6  | 2.019      | 0.0116                      | 0.051                                    | 0.57               | 1.37                          | 1                    | 1                              | 0.71              | 0.54                           | 4.9E-08      | 2   | 4.1E-08        | 2   | 3.6E-08                     | 2   |

|                                                                         |                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equations:</b>                                                       |                                                                                                                                                                                                                                               |
| Inorganics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 1) | DA <sub>event</sub> =<br>K <sub>p</sub> x C <sub>w</sub> x t <sub>event</sub> x CF1 x CF2<br>where CF1 = 0.001 mg/ug and CF2 = 0.001 L/cm <sup>3</sup>                                                                                        |
| Organics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 2)   | t <sub>event</sub> ≤ t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>2 x FA x K <sub>p</sub> x C <sub>w</sub> x (sqrt((6 x t <sub>event</sub> x t <sub>event</sub> ) / (π))) x CF1 x CF2                                             |
| (Eq 3)                                                                  | t <sub>event</sub> > t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>FA x K <sub>p</sub> x C <sub>w</sub> x ( t <sub>event</sub> / (1+B) + 2 x t <sub>event</sub> x ((1 + 3B + 3B <sup>2</sup> ) / (1+B <sup>2</sup> ))) x CF1 x CF2 |

**Note:**  
(1) The EPC is the lower of the 95% upper confidence limit and maximum detected concentration. See Table 3s.  
The dermal parameters were taken from the chemical parameter table of the USEPA June 2017 RSL tables and RAGS Part E.

**Abbreviations:**  
CF1 -- Conversion Factor 1 (0.001 mg/ug)  
CF2 -- Conversion Factor 2 (0.001 L/cm<sup>3</sup>)  
C<sub>w</sub> -- Groundwater or surface water concentration  
VOC -- Volatile organic compound

**Reference:**  
USEPA. 2004. Risk Assessment Guidance for Superfund (RAGS) Volume I: Human Health Evaluation Manual. Part E Supplemental Guidance for Dermal Risk Assessment. Final. USEPA/540/R/99/005. July. Available online: <https://www.epa.gov/risk/risk-USEPA.2017.RegionalScreeningLevelsGenericTables.June.Availableonline:https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 5.1  
NONCANCER TOXICITY DATA -- ORAL/DERMAL  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN     | Chronic / Subchronic | Oral Reference Dose (RfD) |           | GIABS | Oral Absorption Efficiency for Dermal | Absorbed RfD for Dermal |           | Primary Target Organ(s) | Combined Uncertainty / Modifying Factors | Source         | Source Date |
|------------|----------------------------------|-----------|----------------------|---------------------------|-----------|-------|---------------------------------------|-------------------------|-----------|-------------------------|------------------------------------------|----------------|-------------|
|            |                                  |           |                      | Value                     | Units     |       |                                       | Value                   | Units     |                         |                                          |                |             |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | Chronic              | 0.02                      | mg/kg-day | 1     | 100%                                  | 0.02                    | mg/kg-day | Hepatic                 | 1000                                     | IRIS           | 9/30/2010   |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | Chronic              | 0.05                      | mg/kg-day | 1     | 100%                                  | 0.05                    | mg/kg-day | Hepatic                 | 100 / 1                                  | IRIS           | 8/13/2002   |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Chronic              | 0.004                     | mg/kg-day | 1     | 100%                                  | 0.004                   | mg/kg-day | Hepatic                 | 300                                      | IRIS           | 9/30/2009   |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | Chronic              | 0.01                      | mg/kg-day | 1     | 100%                                  | 0.01                    | mg/kg-day | Nervous                 | 300                                      | IRIS           | 9/9/2016    |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | Chronic              | 0.006                     | mg/kg-day | 1     | 100%                                  | 0.006                   | mg/kg-day | Renal                   | 10000                                    | PPRTV Appendix | 10/1/2010   |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | Chronic              | 0.04                      | mg/kg-day | 1     | 100%                                  | 0.04                    | mg/kg-day | Musculoskeletal         | 30                                       | PPRTV          | 9/29/2016   |
| VOC        | Acetone                          | 67-64-1   | Chronic              | 0.9                       | mg/kg-day | 1     | 100%                                  | 0.9                     | mg/kg-day | Renal                   | 1000                                     | IRIS           | 7/31/2003   |
| VOC        | Carbon tetrachloride             | 56-23-5   | Chronic              | 0.004                     | mg/kg-day | 1     | 100%                                  | 0.004                   | mg/kg-day | Hepatic                 | 1000                                     | IRIS           | 3/31/2010   |
| VOC        | Chloroform                       | 67-66-3   | Chronic              | 0.01                      | mg/kg-day | 1     | 100%                                  | 0.01                    | mg/kg-day | Hepatic                 | 100                                      | IRIS           | 10/19/2001  |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | Chronic              | 0.002                     | mg/kg-day | 1     | 100%                                  | 0.002                   | mg/kg-day | Renal                   | 3000                                     | IRIS           | 9/30/2010   |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | Chronic              | 0.6                       | mg/kg-day | 1     | 100%                                  | 0.6                     | mg/kg-day | Developmental           | 1000                                     | IRIS           | 9/26/2003   |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 |                      |                           |           | 1     | 100%                                  |                         |           | NA                      | NA                                       | NA             | NA          |
| VOC        | Methylene chloride               | 75-09-2   | Chronic              | 0.006                     | mg/kg-day | 1     | 100%                                  | 0.006                   | mg/kg-day | Hepatic                 | 30                                       | IRIS           | 11/18/2011  |
| VOC        | Tetrachloroethylene              | 127-18-4  | Chronic              | 0.006                     | mg/kg-day | 1     | 100%                                  | 0.006                   | mg/kg-day | Nervous, Hepatic,       |                                          |                |             |
| VOC        | Toluene                          | 108-88-3  | Chronic              | 0.08                      | mg/kg-day | 1     | 100%                                  | 0.08                    | mg/kg-day | Renal                   | 1000                                     | IRIS           | 2/10/2012   |
|            |                                  |           |                      |                           |           |       |                                       |                         |           | Developmental,          | 3000                                     | IRIS           | 9/23/2005   |
|            |                                  |           |                      |                           |           |       |                                       |                         |           | Hepatic, Renal,         |                                          |                |             |
|            |                                  |           |                      |                           |           |       |                                       |                         |           | Nervous, Lymphatic,     | 100,1000,10 multiple                     |                |             |
| VOC        | Trichloroethylene                | 79-01-6   | Chronic              | 0.0005                    | mg/kg-day | 1     | 100%                                  | 0.0005                  | mg/kg-day | Reproductive            | studies                                  | IRIS           | 9/28/2011   |
| VOC        | Vinyl chloride                   | 75-01-4   | Chronic              | 0.003                     | mg/kg-day | 1     | 100%                                  | 0.003                   | mg/kg-day | Hepatic                 | 30                                       | IRIS           | 8/7/2000    |

**Note:**  
The oral RfDs are taken from the USEPA Regional Screening Levels (RSLs) table, which gathers toxicity reference values from multiple sources using an established hierarchy.  
The absorbed RfD for dermal is calculated by the following equation: RfD-oral x GIABS.  
USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%.

**Abbreviations:**  
GIABS -- Gastrointestinal absorption factor  
NA -- Not available  
RfD -- Reference dose  
RSLs -- EPA Regional Screening Levels  
VOC -- Volatile organic compound

**References:**  
ATSDR. 2017. Minimal Risk Levels (MRLs). June. Available online: <http://www.atsdr.cdc.gov/mrls/index.asp>  
Cal EPA. 2016. Toxicity Criteria Database. Office of Environmental Health Hazard Assessment (OEHHA). Available online: <http://oehha.ca.gov/chemicals>  
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USEPA. 2017. Regional Screening Levels User's Guide. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 5.2  
NONCANCER TOXICITY DATA -- INHALATION  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN     | Chronic / Subchronic | Inhalation Reference Concentration (RfC) |       | Primary Target Organ(s)                                         | Combined Uncertainty / Modifying Factors | Source | Source Date    |
|------------|----------------------------------|-----------|----------------------|------------------------------------------|-------|-----------------------------------------------------------------|------------------------------------------|--------|----------------|
|            |                                  |           |                      | Value                                    | Units |                                                                 |                                          |        |                |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   |                      |                                          |       | NA                                                              | NA                                       | NA     | NA             |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | Chronic              | 0.2                                      | mg/m3 | Hepatic                                                         | 30 / 1                                   | IRIS   | 8/13/2002      |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Chronic              | 0.0003                                   | mg/m3 | Respiratory                                                     | 3000                                     | IRIS   | 9/30/2009      |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | Chronic              | 0.06                                     | mg/m3 | Nervous                                                         | 300                                      | IRIS   | 9/9/2016       |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | Chronic              | 0.007                                    | mg/m3 | Nervous                                                         | 300                                      | PPRTV  | 10/1/2010      |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | Chronic              | 0.004                                    | mg/m3 | Respiratory                                                     | 300                                      | IRIS   | 12/1/1999      |
| VOC        | Acetone                          | 67-64-1   |                      | 31                                       | mg/m3 | Not identified                                                  | Not identified                           | ATSDR  | Not identified |
| VOC        | Carbon tetrachloride             | 56-23-5   | Chronic              | 0.1                                      | mg/m3 | Hepatic                                                         | 100                                      | IRIS   | 3/31/2010      |
| VOC        | Chloroform                       | 67-66-3   |                      | 0.098                                    | mg/m3 | Not identified                                                  | Not identified                           | ATSDR  | Not identified |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  |                      |                                          |       | NA                                                              | NA                                       | NA     | NA             |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | Chronic              | 5                                        | mg/m3 | Developmental, Musculoskeletal                                  | 300                                      | IRIS   | 9/26/2003      |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | Chronic              | 3                                        | mg/m3 | Hepatic, Renal                                                  | 100                                      | IRIS   | 9/1/1993       |
| VOC        | Methylene chloride               | 75-09-2   | Chronic              | 0.6                                      | mg/m3 | Hepatic                                                         | 30                                       | IRIS   | 11/18/2011     |
| VOC        | Tetrachloroethylene              | 127-18-4  | Chronic              | 0.04                                     | mg/m3 | Nervous, Hepatic, Renal                                         | 1000                                     | IRIS   | 2/10/2012      |
| VOC        | Toluene                          | 108-88-3  |                      | 5                                        | mg/m3 | Nervous                                                         | 10                                       | IRIS   | 9/23/2005      |
| VOC        | Trichloroethylene                | 79-01-6   | Chronic              | 0.002                                    | mg/m3 | Developmental, Hepatic, Renal, Nervous, Lymphatic, Reproductive | 100, 10 multiple studies                 | IRIS   | 9/28/2011      |
| VOC        | Vinyl chloride                   | 75-01-4   | Chronic              | 0.1                                      | mg/m3 | Hepatic                                                         | 30                                       | IRIS   | 8/7/2000       |

**Note:**

The inhalation RfCs are taken from the USEPA Regional Screening Levels (RSLs) table, which gathers toxicity reference values from multiple sources using an established hierarchy.

**Abbreviation:**

NA -- Not available

RfC -- Reference concentration

RSLs -- EPA Regional Screening Levels

VOC -- Volatile organic compound

**References:**

ATSDR. 2017. Minimal Risk Levels (MRLs). June. Available online: <http://www.atsdr.cdc.gov/mrls/index.asp>

Cal EPA. 2016. Toxicity Criteria Database. Office of Environmental Health Hazard Assessment (OEHH). Available online: <http://oehha.ca.gov/chemicals>

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USEPA. 2017. Regional Screening Levels User's Guide. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 6.1  
CANCER TOXICITY DATA -- ORAL/DERMAL  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN     | Mutagenic | Oral Slope Factor (CSFo) |               | GIABS | Oral Absorption Efficiency for Dermal | Absorbed CSFd for Dermal |               | Weight of Evidence / Cancer Guidelines Description | Source  | Source Date |
|------------|----------------------------------|-----------|-----------|--------------------------|---------------|-------|---------------------------------------|--------------------------|---------------|----------------------------------------------------|---------|-------------|
|            |                                  |           |           | Value                    | Units         |       |                                       | Value                    | Units         |                                                    |         |             |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | N         | 0.2                      | (mg/kg-day)-1 | 1     | 100%                                  | 0.2                      | (mg/kg-day)-1 | Likely to be carcinogenic to humans                | IRIS    | 9/30/2010   |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | N         |                          |               | 1     | 100%                                  |                          |               | Data are inadequate for assessment                 | IRIS    | 8/13/2002   |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Y         | 30                       | (mg/kg-day)-1 | 1     | 100%                                  | 30                       | (mg/kg-day)-1 | Likely to be carcinogenic to humans                | IRIS    | 9/30/2009   |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | N         |                          |               | 1     | 100%                                  |                          |               | Data are inadequate for assessment                 | IRIS    | 9/9/2016    |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | N         | 0.091                    | (mg/kg-day)-1 | 1     | 100%                                  | 0.091                    | (mg/kg-day)-1 | B2 / Probable human carcinogen                     | IRIS    | 3/31/1987   |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | N         | 0.037                    | (mg/kg-day)-1 | 1     | 100%                                  | 0.037                    | (mg/kg-day)-1 | Likely to be carcinogenic to humans                | PPRTV   | 9/29/2016   |
| VOC        | Acetone                          | 67-64-1   | N         |                          |               | 1     | 100%                                  |                          |               | Data are inadequate for assessment                 | IRIS    | 7/31/2003   |
| VOC        | Carbon tetrachloride             | 56-23-5   | N         | 0.07                     | (mg/kg-day)-1 | 1     | 100%                                  | 0.07                     | (mg/kg-day)-1 | Likely to be carcinogenic to humans                | IRIS    | 3/31/2010   |
| VOC        | Chloroform                       | 67-66-3   | N         | 0.031                    | (mg/kg-day)-1 | 1     | 100%                                  | 0.031                    | (mg/kg-day)-1 | Class B2 (EPA) / Class 2B (IARC)                   | Cal EPA | 1/20/2011   |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | N         |                          |               | 1     | 100%                                  |                          |               | Data are inadequate for assessment                 | IRIS    | 9/30/2010   |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | N         |                          |               | 1     | 100%                                  |                          |               | Data are inadequate for assessment                 | IRIS    | 9/26/2003   |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | N         | 0.0018                   | (mg/kg-day)-1 | 1     | 100%                                  | 0.0018                   | (mg/kg-day)-1 | Not classified (EPA) / Class 3 (IARC)              | Cal EPA | 1/20/2011   |
| VOC        | Methylene chloride               | 75-09-2   | Y         | 0.002                    | (mg/kg-day)-1 | 1     | 100%                                  | 0.002                    | (mg/kg-day)-1 | Likely to be carcinogenic to humans                | IRIS    | 11/18/2011  |
| VOC        | Tetrachloroethylene              | 127-18-4  | N         | 0.0021                   | (mg/kg-day)-1 | 1     | 100%                                  | 0.0021                   | (mg/kg-day)-1 | Likely to be carcinogenic in humans                | IRIS    | 2/10/2012   |
| VOC        | Toluene                          | 108-88-3  | N         |                          |               | 1     | 100%                                  |                          |               | Data are inadequate for assessment                 | IRIS    | 9/23/2005   |
| VOC        | Trichloroethylene                | 79-01-6   | Y         | 0.046                    | (mg/kg-day)-1 | 1     | 100%                                  | 0.046                    | (mg/kg-day)-1 | Carcinogenic to humans                             | IRIS    | 9/28/2011   |
| VOC        | Vinyl chloride                   | 75-01-4   | Y         | 0.72                     | (mg/kg-day)-1 | 1     | 100%                                  | 0.72                     | (mg/kg-day)-1 | Known/likely human carcinogen                      | IRIS    | 8/7/2000    |

**Note:**

The oral SFs are taken from the USEPA Regional Screening Levels (RSLs) table, which gathers toxicity reference values from multiple sources using an established hierarchy.

The absorbed SFd for dermal is calculated by the following equation: SF-oral / GIABS.

USEPA recommends that the oral SF should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%.

**Abbreviations:**

GIABS -- Gastrointestinal absorption factor

NA -- Not available

RSLs -- EPA Regional Screening Levels

SFd -- Dermal slope factor

SFo -- Oral cancer slope factor

VOC -- Volatile organic compound

**References:**

ATSDR. 2017. Minimal Risk Levels (MRLs). June. Available online: <http://www.atsdr.cdc.gov/mrls/index.asp>

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USEPA. 2017. Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV). January. Available online: <https://hhpprtv.ornl.gov/index.html>

USEPA. 2017. Regional Screening Levels User's Guide. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 6.2  
CANCER TOXICITY DATA -- INHALATION  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN     | Mutagenic | Inhalation Unit Risk (IUR) |           | Weight of Evidence / Cancer Guidelines Description                                                                 | Source  | Source Date |
|------------|----------------------------------|-----------|-----------|----------------------------|-----------|--------------------------------------------------------------------------------------------------------------------|---------|-------------|
|            |                                  |           |           | Value                      | Units     |                                                                                                                    |         |             |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | N         | 0.000058                   | (ug/m3)-1 | Class C (EPA)<br>Suggestive evidence of carcinogenicity, but not sufficient to assess human carcinogenic potential | Cal EPA | 1/20/2011   |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | N         |                            |           |                                                                                                                    | IRIS    | 8/13/2002   |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Y         |                            |           | Not assessed                                                                                                       | IRIS    | 9/30/2009   |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | N         |                            |           | Data are inadequate for assessment                                                                                 | IRIS    | 9/9/2016    |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | N         | 0.000026                   | (ug/m3)-1 | B2 / Probable human carcinogen                                                                                     | IRIS    | 3/31/1987   |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | N         | 0.000037                   | (ug/m3)-1 | Likely to be carcinogenic to humans                                                                                | PPRTV   | 9/29/2016   |
| VOC        | Acetone                          | 67-64-1   | N         |                            |           | Data are inadequate for assessment                                                                                 | IRIS    | 7/31/2003   |
| VOC        | Carbon tetrachloride             | 56-23-5   | N         | 0.000006                   | (ug/m3)-1 | Likely to be carcinogenic to humans                                                                                | IRIS    | 3/31/2010   |
| VOC        | Chloroform                       | 67-66-3   | N         | 0.000023                   | (ug/m3)-1 | Not likely to be carcinogenic to humans                                                                            | IRIS    | 10/19/2001  |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | N         |                            |           | Data are inadequate for assessment                                                                                 | IRIS    | 9/30/2010   |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | N         |                            |           | Data are inadequate for assessment                                                                                 | IRIS    | 9/26/2003   |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | N         | 0.00000026                 | (ug/m3)-1 | Not classified (EPA) / Class 3 (IARC)                                                                              | Cal EPA | 1/20/2011   |
| VOC        | Methylene chloride               | 75-09-2   | Y         | 0.00000001                 | (ug/m3)-1 | Likely to be carcinogenic to humans                                                                                | IRIS    | 11/18/2011  |
| VOC        | Tetrachloroethylene              | 127-18-4  | N         | 0.00000026                 | (ug/m3)-1 | Likely to be carcinogenic in humans                                                                                | IRIS    | 2/10/2012   |
| VOC        | Toluene                          | 108-88-3  | N         |                            |           | Data are inadequate for assessment                                                                                 | IRIS    | 9/23/2005   |
| VOC        | Trichloroethylene                | 79-01-6   | Y         | 0.0000041                  | (ug/m3)-1 | Carcinogenic to humans                                                                                             | IRIS    | 9/28/2011   |
| VOC        | Vinyl chloride                   | 75-01-4   | Y         | 0.0000044                  | (ug/m3)-1 | Known/likely human carcinogen                                                                                      | IRIS    | 8/7/2000    |

**Note:**

The IURs are taken from the USEPA Regional Screening Levels (RSLs) table, which gathers toxicity reference values from multiple sources using an established hierarchy.

**Abbreviation:**

IUR -- Inhalation unit risk

NA -- Not available

RSLs -- EPA Regional Screening Levels

VOC -- Volatile organic compound

**References:**

ATSDR. 2017. Minimal Risk Levels (MRLs). June. Available online: <http://www.atsdr.cdc.gov/mrls/index.asp>

Cal EPA. 2016. Toxicity Criteria Database. Office of Environmental Health Hazard Assessment (OEHHHA). Available online: <http://oehha.ca.gov/chemicals>

USEPA. 2011. Health Effects Assessment Summary Tables (HEAST). December. Available online: <https://epa-heast.onrl.gov/>

USEPA. 2017. Integrated Risk Information System (IRIS). Last Updated June 16. Available online: <https://www.epa.gov/iris>

USEPA. 2017. Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV). January. Available online: <https://hhpprtv.onrl.gov/index.html>

USEPA. 2017. Regional Screening Levels User's Guide. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE 7.1A - FLUVIAL AQUIFER  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A WORKER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Worker  
Receptor Age: Adult

| Medium            | Exposure Medium          | Exposure Point | Exposure Route | COPC Group      | COPC                      | CASRN     | EPC     |       | Cancer Risk Calculations  |           |         |               |             | Non-Cancer Hazard Calculations |           |               |           |                 |           |         |           |         |
|-------------------|--------------------------|----------------|----------------|-----------------|---------------------------|-----------|---------|-------|---------------------------|-----------|---------|---------------|-------------|--------------------------------|-----------|---------------|-----------|-----------------|-----------|---------|-----------|---------|
|                   |                          |                |                |                 |                           |           | Value   | Units | Exposure Intake           |           | CSF/IUR |               | Cancer Risk | Exposure Intake                |           | RfD/RfC       |           | Hazard Quotient |           |         |           |         |
|                   |                          |                |                |                 |                           |           |         |       | Value                     | Units     | Value   | Units         |             | Value                          | Units     | Value         | Units     |                 |           |         |           |         |
| Groundwater       | Groundwater              | Groundwater    | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane | 79-34-5   | 2.4E-01 | ug/L  | 9.2E-07                   | mg/kg-day | 2.0E-01 | (mg/kg-day)-1 | 1.8E-07     | 2.6E-06                        | mg/kg-day | 2.0E-02       | mg/kg-day | 1.3E-04         |           |         |           |         |
|                   |                          |                |                | VOC             | 1,1-Dichloroethene        | 75-35-4   | 7.4E-01 | ug/L  | 2.8E-06                   | mg/kg-day |         |               |             | 8.0E-06                        | mg/kg-day | 5.0E-02       | mg/kg-day | 1.6E-04         |           |         |           |         |
|                   |                          |                |                | VOC             | 1,2,3-Trichloropropane    | 96-18-4   | 1.6E+00 | ug/L  | 6.2E-06                   | mg/kg-day | 3.0E+01 | (mg/kg-day)-1 | 1.9E-04     | 1.7E-05                        | mg/kg-day | 4.0E-03       | mg/kg-day | 4.4E-03         |           |         |           |         |
|                   |                          |                |                | VOC             | 1,2,4-Trimethylbenzene    | 95-63-6   | 1.4E+02 | ug/L  | 5.4E-04                   | mg/kg-day |         |               |             | 1.5E-03                        | mg/kg-day | 1.0E-02       | mg/kg-day | 1.5E-01         |           |         |           |         |
|                   |                          |                |                | VOC             | 1,2-Dichloroethane        | 107-06-2  | 4.5E-01 | ug/L  | 1.7E-06                   | mg/kg-day | 9.1E-02 | (mg/kg-day)-1 | 1.6E-07     | 4.8E-06                        | mg/kg-day | 6.0E-03       | mg/kg-day | 8.0E-04         |           |         |           |         |
|                   |                          |                |                | VOC             | 1,2-Dichloropropane       | 78-87-5   | 5.4E-01 | ug/L  | 2.0E-06                   | mg/kg-day | 3.7E-02 | (mg/kg-day)-1 | 7.6E-08     | 5.7E-06                        | mg/kg-day | 4.0E-02       | mg/kg-day | 1.4E-04         |           |         |           |         |
|                   |                          |                |                | VOC             | Acetone                   | 67-64-1   | 2.4E+02 | ug/L  | 9.3E-04                   | mg/kg-day |         |               |             | 2.6E-03                        | mg/kg-day | 9.0E-01       | mg/kg-day | 2.9E-03         |           |         |           |         |
|                   |                          |                |                | VOC             | Carbon tetrachloride      | 56-23-5   | 5.1E+00 | ug/L  | 1.9E-05                   | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 1.4E-06     | 5.4E-05                        | mg/kg-day | 4.0E-03       | mg/kg-day | 1.4E-02         |           |         |           |         |
|                   |                          |                |                | VOC             | Chloroform                | 67-66-3   | 1.8E+02 | ug/L  | 6.7E-04                   | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 2.1E-05     | 1.9E-03                        | mg/kg-day | 1.0E-02       | mg/kg-day | 1.9E-01         |           |         |           |         |
|                   |                          |                |                | VOC             | cis-1,2-Dichloroethylene  | 156-59-2  | 2.5E+01 | ug/L  | 9.7E-05                   | mg/kg-day |         |               |             | 2.7E-04                        | mg/kg-day | 2.0E-03       | mg/kg-day | 1.4E-01         |           |         |           |         |
|                   |                          |                |                | VOC             | Methyl Ethyl Ketone       | 78-93-3   | 6.6E+02 | ug/L  | 2.5E-03                   | mg/kg-day |         |               |             | 7.0E-03                        | mg/kg-day | 6.0E-01       | mg/kg-day | 1.2E-02         |           |         |           |         |
|                   |                          |                |                | VOC             | Methyl tert-butyl ether   | 1634-04-4 | 5.5E+00 | ug/L  | 2.1E-05                   | mg/kg-day | 1.8E-03 | (mg/kg-day)-1 | 3.8E-08     | 5.9E-05                        | mg/kg-day |               |           |                 |           |         |           |         |
|                   |                          |                |                | VOC             | Methylene chloride        | 75-09-2   | 1.8E+02 | ug/L  | 6.8E-04                   | mg/kg-day | 2.0E-03 | (mg/kg-day)-1 | 1.4E-06     | 1.9E-03                        | mg/kg-day | 6.0E-03       | mg/kg-day | 3.2E-01         |           |         |           |         |
|                   |                          |                |                | VOC             | Tetrachloroethylene       | 127-18-4  | 2.7E+01 | ug/L  | 1.0E-04                   | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 2.1E-07     | 2.8E-04                        | mg/kg-day | 6.0E-03       | mg/kg-day | 4.7E-02         |           |         |           |         |
|                   |                          |                |                | VOC             | Toluene                   | 108-88-3  | 1.1E+00 | ug/L  | 4.3E-06                   | mg/kg-day |         |               |             | 1.2E-05                        | mg/kg-day | 8.0E-02       | mg/kg-day | 1.5E-04         |           |         |           |         |
|                   |                          |                |                | VOC             | Trichloroethylene         | 79-01-6   | 1.4E+01 | ug/L  | 5.2E-05                   | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 2.4E-06     | 1.5E-04                        | mg/kg-day | 5.0E-04       | mg/kg-day | 2.9E-01         |           |         |           |         |
|                   |                          |                |                | VOC             | Vinyl chloride            | 75-01-4   | 4.6E+00 | ug/L  | 1.8E-05                   | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 1.3E-05     | 5.0E-05                        | mg/kg-day | 3.0E-03       | mg/kg-day | 1.7E-02         |           |         |           |         |
|                   |                          |                |                | Ingestion Total |                           |           |         |       |                           |           |         |               |             |                                |           | 2.3E-04       | 1.2E+00   |                 |           |         |           |         |
|                   |                          |                |                | Groundwater     | Groundwater               | Tapwater  | Dermal  | VOC   | 1,1,2,2-Tetrachloroethane | 79-34-5   | 2.4E-01 | ug/L          | 4.8E-08     | mg/kg-day                      | 2.0E-01   | (mg/kg-day)-1 | 9.6E-09   | 1.3E-07         | mg/kg-day | 2.0E-02 | mg/kg-day | 6.7E-06 |
|                   |                          |                |                |                 |                           |           |         | VOC   | 1,1-Dichloroethene        | 75-35-4   | 7.4E-01 | ug/L          | 1.6E-07     | mg/kg-day                      |           |               |           | 4.5E-07         | mg/kg-day | 5.0E-02 | mg/kg-day | 9.1E-06 |
| VOC               | 1,2,3-Trichloropropane   | 96-18-4        | 1.6E+00        |                 |                           |           |         | ug/L  | 3.1E-07                   | mg/kg-day | 3.0E+01 | (mg/kg-day)-1 | 9.2E-06     | 8.6E-07                        | mg/kg-day | 4.0E-03       | mg/kg-day | 2.1E-04         |           |         |           |         |
| VOC               | 1,2,4-Trimethylbenzene   | 95-63-6        | 1.4E+02        |                 |                           |           |         | ug/L  | 2.6E-04                   | mg/kg-day |         |               |             | 7.1E-04                        | mg/kg-day | 1.0E-02       | mg/kg-day | 7.1E-02         |           |         |           |         |
| VOC               | 1,2-Dichloroethane       | 107-06-2       | 4.5E-01        |                 |                           |           |         | ug/L  | 3.5E-08                   | mg/kg-day | 9.1E-02 | (mg/kg-day)-1 | 3.2E-09     | 9.9E-08                        | mg/kg-day | 6.0E-03       | mg/kg-day | 1.7E-05         |           |         |           |         |
| VOC               | 1,2-Dichloropropane      | 78-87-5        | 5.4E-01        |                 |                           |           |         | ug/L  | 8.1E-08                   | mg/kg-day | 3.7E-02 | (mg/kg-day)-1 | 3.0E-09     | 2.3E-07                        | mg/kg-day | 4.0E-02       | mg/kg-day | 5.6E-06         |           |         |           |         |
| VOC               | Acetone                  | 67-64-1        | 2.4E+02        |                 |                           |           |         | ug/L  | 1.9E-06                   | mg/kg-day |         |               |             | 5.4E-06                        | mg/kg-day | 9.0E-01       | mg/kg-day | 6.0E-06         |           |         |           |         |
| VOC               | Carbon tetrachloride     | 56-23-5        | 5.1E+00        |                 |                           |           |         | ug/L  | 2.2E-06                   | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 1.5E-07     | 6.0E-06                        | mg/kg-day | 4.0E-03       | mg/kg-day | 1.5E-03         |           |         |           |         |
| VOC               | Chloroform               | 67-66-3        | 1.8E+02        |                 |                           |           |         | ug/L  | 2.5E-05                   | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 7.8E-07     | 7.0E-05                        | mg/kg-day | 1.0E-02       | mg/kg-day | 7.0E-03         |           |         |           |         |
| VOC               | cis-1,2-Dichloroethylene | 156-59-2       | 2.5E+01        |                 |                           |           |         | ug/L  | 5.2E-06                   | mg/kg-day |         |               |             | 1.4E-05                        | mg/kg-day | 2.0E-03       | mg/kg-day | 7.2E-03         |           |         |           |         |
| VOC               | Methyl Ethyl Ketone      | 78-93-3        | 6.6E+02        |                 |                           |           |         | ug/L  | 1.0E-05                   | mg/kg-day |         |               |             | 2.9E-05                        | mg/kg-day | 6.0E-01       | mg/kg-day | 4.9E-05         |           |         |           |         |
| VOC               | Methyl tert-butyl ether  | 1634-04-4      | 5.5E+00        |                 |                           |           |         | ug/L  | 2.1E-07                   | mg/kg-day | 1.8E-03 | (mg/kg-day)-1 | 3.7E-10     | 5.8E-07                        | mg/kg-day |               |           |                 |           |         |           |         |
| VOC               | Methylene chloride       | 75-09-2        | 1.8E+02        |                 |                           |           |         | ug/L  | 1.1E-05                   | mg/kg-day | 2.0E-03 | (mg/kg-day)-1 | 2.2E-08     | 3.1E-05                        | mg/kg-day | 6.0E-03       | mg/kg-day | 5.1E-03         |           |         |           |         |
| VOC               | Tetrachloroethylene      | 127-18-4       | 2.7E+01        |                 |                           |           |         | ug/L  | 2.5E-05                   | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 5.3E-08     | 7.0E-05                        | mg/kg-day | 6.0E-03       | mg/kg-day | 1.2E-02         |           |         |           |         |
| VOC               | Toluene                  | 108-88-3       | 1.1E+00        |                 |                           |           |         | ug/L  | 6.3E-07                   | mg/kg-day |         |               |             | 1.8E-06                        | mg/kg-day | 8.0E-02       | mg/kg-day | 2.2E-05         |           |         |           |         |
| VOC               | Trichloroethylene        | 79-01-6        | 1.4E+01        |                 |                           |           |         | ug/L  | 3.6E-06                   | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 1.6E-07     | 1.0E-05                        | mg/kg-day | 5.0E-04       | mg/kg-day | 2.0E-02         |           |         |           |         |
| VOC               | Vinyl chloride           | 75-01-4        | 4.6E+00        |                 |                           |           |         | ug/L  | 6.1E-07                   | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 4.4E-07     | 1.7E-06                        | mg/kg-day | 3.0E-03       | mg/kg-day | 5.7E-04         |           |         |           |         |
| Dermal Total      |                          |                |                |                 |                           |           |         |       |                           |           |         | 1.1E-05       | 1.2E-01     |                                |           |               |           |                 |           |         |           |         |
| Groundwater Total |                          |                |                |                 |                           |           |         |       |                           |           |         | 2.4E-04       | 1.3E+00     |                                |           |               |           |                 |           |         |           |         |
| Receptor Total    |                          |                |                |                 |                           |           |         |       |                           |           |         | 2.4E-04       | 1.3E+00     |                                |           |               |           |                 |           |         |           |         |

#### Notes:

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.

The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2"s.

The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGS Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.

The DAvent values for dermal exposure to groundwater are calculated in Table 4.Supp.3.

#### Abbreviations:

COPC -- Constituent of potential concern

CSF -- Oral cancer slope factor

EPC -- Exposure point concentration

IUR - Inhalation unit risk

RfC -- Inhalation reference concentration

RfD -- Oral reference dose

TABLE 7.1B - FLUVIAL AQUIFER  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium      | Exposure Medium | Exposure Point | Exposure Route | COPC Group      | COPC                      | CASRN     | Mutagenic | EPC     |         |       | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |         |
|-------------|-----------------|----------------|----------------|-----------------|---------------------------|-----------|-----------|---------|---------|-------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|--|--|--|--|--|---------|
|             |                 |                |                |                 |                           |           |           | Adult   | Child   | Units | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |           |         |           |                 | Child (0-6 years) |           |         |           |                 |  |  |  |  |  |         |
|             |                 |                |                |                 |                           |           |           |         |         |       | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |  |  |  |  |  |         |
|             |                 |                |                |                 |                           |           |           |         |         |       | Value                        | Units     | Value         | Units         |             | Value                          | Units     | Value   | Units     |                 | Value             | Units     | Value   | Units     |                 |  |  |  |  |  |         |
| Groundwater | Groundwater     | Tapwater       | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane | 79-34-5   | N         | 2.4E-01 | 2.4E-01 | ug/L  | 3.7E-06                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 7.5E-07     | 7.3E-06                        | mg/kg-day | 2.0E-02 | mg/kg-day | 3.6E-04         | 1.2E-05           | mg/kg-day | 2.0E-02 | mg/kg-day | 6.0E-04         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | 1,1-Dichloroethene        | 75-35-4   | N         | 7.4E-01 | 7.4E-01 | ug/L  | 1.1E-05                      | mg/kg-day |               |               |             | 2.2E-05                        | mg/kg-day | 5.0E-02 | mg/kg-day | 4.5E-04         | 3.7E-05           | mg/kg-day | 5.0E-02 | mg/kg-day | 7.4E-04         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | 1,2,3-Trichloropropane    | 96-18-4   | Y         | 1.6E+00 | 1.6E+00 | ug/L  | 9.3E-05                      | mg/kg-day | 3.0E+01       | (mg/kg-day)-1 | 2.8E-03     | 4.9E-05                        | mg/kg-day | 4.0E-03 | mg/kg-day | 1.2E-02         | 8.1E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 2.0E-02         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | 1,2,4-Trimethylbenzene    | 95-63-6   | N         | 1.4E+02 | 1.4E+02 | ug/L  | 2.2E-03                      | mg/kg-day |               |               |             | 4.3E-03                        | mg/kg-day | 1.0E-02 | mg/kg-day | 4.3E-01         | 7.1E-03           | mg/kg-day | 1.0E-02 | mg/kg-day | 7.1E-01         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | 1,2-Dichloroethane        | 107-06-2  | N         | 4.5E-01 | 4.5E-01 | ug/L  | 6.9E-06                      | mg/kg-day | 9.1E-02       | (mg/kg-day)-1 | 6.3E-07     | 1.3E-05                        | mg/kg-day | 6.0E-03 | mg/kg-day | 2.2E-03         | 2.2E-05           | mg/kg-day | 6.0E-03 | mg/kg-day | 3.7E-03         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | 1,2-Dichloropropane       | 78-87-5   | N         | 5.4E-01 | 5.4E-01 | ug/L  | 8.2E-06                      | mg/kg-day | 3.7E-02       | (mg/kg-day)-1 | 3.1E-07     | 1.6E-05                        | mg/kg-day | 4.0E-02 | mg/kg-day | 4.0E-04         | 2.7E-05           | mg/kg-day | 4.0E-02 | mg/kg-day | 6.7E-04         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Acetone                   | 67-64-1   | N         | 2.4E+02 | 2.4E+02 | ug/L  | 3.7E-03                      | mg/kg-day |               |               |             | 7.3E-03                        | mg/kg-day | 9.0E-01 | mg/kg-day | 8.1E-03         | 1.2E-02           | mg/kg-day | 9.0E-01 | mg/kg-day | 1.3E-02         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Carbon tetrachloride      | 56-23-5   | N         | 5.1E+00 | 5.1E+00 | ug/L  | 7.8E-05                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 5.5E-06     | 1.5E-04                        | mg/kg-day | 4.0E-03 | mg/kg-day | 3.8E-02         | 2.5E-04           | mg/kg-day | 4.0E-03 | mg/kg-day | 6.3E-02         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Chloroform                | 67-66-3   | N         | 1.8E+02 | 1.8E+02 | ug/L  | 2.7E-03                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 8.4E-05     | 5.3E-03                        | mg/kg-day | 1.0E-02 | mg/kg-day | 5.3E-01         | 8.8E-03           | mg/kg-day | 1.0E-02 | mg/kg-day | 8.8E-01         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | cis-1,2-Dichloroethylene  | 156-59-2  | N         | 2.5E+01 | 2.5E+01 | ug/L  | 3.9E-04                      | mg/kg-day |               |               |             | 7.6E-04                        | mg/kg-day | 2.0E-03 | mg/kg-day | 3.8E-01         | 1.3E-03           | mg/kg-day | 2.0E-03 | mg/kg-day | 6.3E-01         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Methyl Ethyl Ketone       | 78-93-3   | N         | 6.6E+02 | 6.6E+02 | ug/L  | 1.0E-02                      | mg/kg-day |               |               |             | 2.0E-02                        | mg/kg-day | 6.0E-01 | mg/kg-day | 3.3E-02         | 3.3E-02           | mg/kg-day | 6.0E-01 | mg/kg-day | 5.5E-02         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Methyl tert-butyl ether   | 1634-04-4 | N         | 5.5E+00 | 5.5E+00 | ug/L  | 8.5E-05                      | mg/kg-day |               |               |             | 1.6E-04                        | mg/kg-day |         |           |                 | 2.7E-04           | mg/kg-day |         |           |                 |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Methylene chloride        | 75-09-2   | Y         | 1.8E+02 | 1.8E+02 | ug/L  | 1.0E-02                      | mg/kg-day | 2.0E-03       | (mg/kg-day)-1 | 2.0E-05     | 5.3E-03                        | mg/kg-day | 6.0E-03 | mg/kg-day | 8.8E-01         | 8.8E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 1.5E+00         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Tetrachloroethylene       | 127-18-4  | N         | 2.7E+01 | 2.7E+01 | ug/L  | 4.1E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 8.6E-07     | 8.0E-04                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.3E-01         | 1.3E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 2.2E-01         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Toluene                   | 108-88-3  | N         | 1.1E+00 | 1.1E+00 | ug/L  | 1.7E-05                      | mg/kg-day |               |               |             | 3.4E-05                        | mg/kg-day | 8.0E-02 | mg/kg-day | 4.2E-04         | 5.6E-05           | mg/kg-day | 8.0E-02 | mg/kg-day | 7.0E-04         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Trichloroethylene         | 79-01-6   | Y         | 1.4E+01 | 1.4E+01 | ug/L  | 3.2E-04                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 1.5E-05     | 4.1E-04                        | mg/kg-day | 5.0E-04 | mg/kg-day | 8.2E-01         | 6.8E-04           | mg/kg-day | 5.0E-04 | mg/kg-day | 1.4E+00         |  |  |  |  |  |         |
|             |                 |                |                | VOC             | Vinyl chloride            | 75-01-4   | Y         | 4.6E+00 | 4.6E+00 | ug/L  | 3.1E-04                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 2.2E-04     | 1.4E-04                        | mg/kg-day | 3.0E-03 | mg/kg-day | 4.6E-02         | 2.3E-04           | mg/kg-day | 3.0E-03 | mg/kg-day | 7.7E-02         |  |  |  |  |  |         |
|             |                 |                |                | Ingestion Total |                           |           |           |         |         |       |                              |           |               |               |             |                                |           |         | 3.1E-03   |                 |                   |           |         |           | 3.3E+00         |  |  |  |  |  | 5.5E+00 |

**Notes:**  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The age-adjustments for a resident's cancer risk are calculated in Table 4.Supp.1.  
The exposure intakes for MMOA chemicals (e.g., chromium) are adjusted for age are calculated in Tables 4.Supp.2.

**Abbreviations:**  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR - Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral or dermal reference dose  
UCL -- Upper confidence limit



TABLE 7.2A - INTERMEDIATE AQUIFER  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A WORKER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Worker  
Receptor Age: Adult

| Medium            | Exposure Medium          | Exposure Point | Exposure Route | COPC Group      | COPC                      | CASRN    | EPC     |                           | Cancer Risk Calculations |           |         |               |             | Non-Cancer Hazard Calculations |               |         |           |                 |
|-------------------|--------------------------|----------------|----------------|-----------------|---------------------------|----------|---------|---------------------------|--------------------------|-----------|---------|---------------|-------------|--------------------------------|---------------|---------|-----------|-----------------|
|                   |                          |                |                |                 |                           |          | Value   | Units                     | Exposure Intake          |           | CSF/IUR |               | Cancer Risk | Exposure Intake                |               | RfD/RfC |           | Hazard Quotient |
|                   |                          |                |                |                 |                           |          |         |                           | Value                    | Units     | Value   | Units         |             | Value                          | Units         | Value   | Units     |                 |
| Groundwater       | Groundwater              | Groundwater    | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane | 79-34-5  | 2.1E-01 | ug/L                      | 8.0E-07                  | mg/kg-day | 2.0E-01 | (mg/kg-day)-1 | 1.6E-07     | 2.2E-06                        | mg/kg-day     | 2.0E-02 | mg/kg-day | 1.1E-04         |
|                   |                          |                |                | VOC             | Carbon tetrachloride      | 56-23-5  | 3.9E-01 | ug/L                      | 1.5E-06                  | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 1.0E-07     | 4.1E-06                        | mg/kg-day     | 4.0E-03 | mg/kg-day | 1.0E-03         |
|                   |                          |                |                | VOC             | Chloroform                | 67-66-3  | 2.1E+00 | ug/L                      | 7.9E-06                  | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 2.5E-07     | 2.2E-05                        | mg/kg-day     | 1.0E-02 | mg/kg-day | 2.2E-03         |
|                   |                          |                |                | VOC             | cis-1,2-Dichloroethylene  | 156-59-2 | 3.5E+00 | ug/L                      | 1.3E-05                  | mg/kg-day |         |               |             | 3.8E-05                        | mg/kg-day     | 2.0E-03 | mg/kg-day | 1.9E-02         |
|                   |                          |                |                | VOC             | Methyl Ethyl Ketone       | 78-93-3  | 1.1E+02 | ug/L                      | 4.1E-04                  | mg/kg-day |         |               |             | 1.2E-03                        | mg/kg-day     | 6.0E-01 | mg/kg-day | 1.9E-03         |
|                   |                          |                |                | VOC             | Tetrachloroethylene       | 127-18-4 | 2.1E+01 | ug/L                      | 8.0E-05                  | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 1.7E-07     | 2.2E-04                        | mg/kg-day     | 6.0E-03 | mg/kg-day | 3.7E-02         |
|                   |                          |                |                | VOC             | Trichloroethylene         | 79-01-6  | 9.1E+00 | ug/L                      | 3.5E-05                  | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 1.6E-06     | 9.7E-05                        | mg/kg-day     | 5.0E-04 | mg/kg-day | 1.9E-01         |
|                   |                          |                |                | VOC             | Vinyl chloride            | 75-01-4  | 5.3E-01 | ug/L                      | 2.0E-06                  | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 1.5E-06     | 5.7E-06                        | mg/kg-day     | 3.0E-03 | mg/kg-day | 1.9E-03         |
|                   |                          |                |                | Ingestion Total |                           |          |         |                           |                          |           | 3.7E-06 |               |             |                                |               | 2.6E-01 |           |                 |
|                   |                          |                | Groundwater    | Groundwater     | Tapwater                  | Dermal   | VOC     | 1,1,2,2-Tetrachloroethane | 79-34-5                  | 2.1E-01   | ug/L    | 4.1E-08       | mg/kg-day   | 2.0E-01                        | (mg/kg-day)-1 | 8.2E-09 | 1.2E-07   | mg/kg-day       |
| VOC               | Carbon tetrachloride     | 56-23-5        |                |                 |                           |          | 3.9E-01 | ug/L                      | 1.6E-07                  | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 1.2E-08     | 4.6E-07                        | mg/kg-day     | 4.0E-03 | mg/kg-day | 1.2E-04         |
| VOC               | Chloroform               | 67-66-3        |                |                 |                           |          | 2.1E+00 | ug/L                      | 3.0E-07                  | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 9.1E-09     | 8.3E-07                        | mg/kg-day     | 1.0E-02 | mg/kg-day | 8.3E-05         |
| VOC               | cis-1,2-Dichloroethylene | 156-59-2       |                |                 |                           |          | 3.5E+00 | ug/L                      | 7.2E-07                  | mg/kg-day |         |               |             | 2.0E-06                        | mg/kg-day     | 2.0E-03 | mg/kg-day | 1.0E-03         |
| VOC               | Methyl Ethyl Ketone      | 78-93-3        |                |                 |                           |          | 1.1E+02 | ug/L                      | 1.7E-06                  | mg/kg-day |         |               |             | 4.8E-06                        | mg/kg-day     | 6.0E-01 | mg/kg-day | 8.0E-06         |
| VOC               | Tetrachloroethylene      | 127-18-4       |                |                 |                           |          | 2.1E+01 | ug/L                      | 2.0E-05                  | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 4.1E-08     | 5.5E-05                        | mg/kg-day     | 6.0E-03 | mg/kg-day | 9.2E-03         |
| VOC               | Trichloroethylene        | 79-01-6        |                |                 |                           |          | 9.1E+00 | ug/L                      | 2.4E-06                  | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 1.1E-07     | 6.6E-06                        | mg/kg-day     | 5.0E-04 | mg/kg-day | 1.3E-02         |
| VOC               | Vinyl chloride           | 75-01-4        |                |                 |                           |          | 5.3E-01 | ug/L                      | 7.0E-08                  | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 5.1E-08     | 2.0E-07                        | mg/kg-day     | 3.0E-03 | mg/kg-day | 6.6E-05         |
| Dermal Total      |                          |                |                |                 |                           |          | 2.3E-07 |                           |                          |           |         | 2.4E-02       |             |                                |               |         |           |                 |
| Groundwater Total |                          |                |                |                 |                           |          |         |                           |                          |           |         | 4.0E-06       |             | 2.8E-01                        |               |         |           |                 |
| Receptor Total    |                          |                |                |                 |                           |          |         |                           |                          |           |         | 4.0E-06       |             | 2.8E-01                        |               |         |           |                 |

**Notes:**  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2's".  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The DAvent values for dermal exposure to groundwater are calculated in Table 4.Supp.3.

**Abbreviations:**  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR -- Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral reference dose

TABLE 7.2B - INTERMEDIATE AQUIFER  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium      | Exposure Medium | Exposure Point | Exposure Route | COPC Group      | COPC                      | CASRN    | Mutagenic | EPC     |         |       | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |                   |           |         |           |                 |
|-------------|-----------------|----------------|----------------|-----------------|---------------------------|----------|-----------|---------|---------|-------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|
|             |                 |                |                |                 |                           |          |           | Adult   | Child   | Units | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |           |         |           |                 | Child (0-6 years) |           |         |           |                 |
|             |                 |                |                |                 |                           |          |           |         |         |       | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |
|             |                 |                |                |                 |                           |          |           | Value   | Value   | Units | Value                        | Units     | Value         | Units         |             | Value                          | Units     | Value   | Units     |                 | Value             | Units     | Value   | Units     |                 |
| Groundwater | Groundwater     | Tapwater       | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane | 79-34-5  | N         | 2.1E-01 | 2.1E-01 | ug/L  | 3.2E-06                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 6.4E-07     | 6.2E-06                        | mg/kg-day | 2.0E-02 | mg/kg-day | 3.1E-04         | 1.0E-05           | mg/kg-day | 2.0E-02 | mg/kg-day | 5.2E-04         |
|             |                 |                |                | VOC             | Carbon tetrachloride      | 56-23-5  | N         | 3.9E-01 | 3.9E-01 | ug/L  | 6.0E-06                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 4.2E-07     | 1.2E-05                        | mg/kg-day | 4.0E-03 | mg/kg-day | 2.9E-03         | 1.9E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 4.8E-03         |
|             |                 |                |                | VOC             | Chloroform                | 67-66-3  | N         | 2.1E+00 | 2.1E+00 | ug/L  | 3.2E-05                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 9.9E-07     | 6.2E-05                        | mg/kg-day | 1.0E-02 | mg/kg-day | 6.2E-03         | 1.0E-04           | mg/kg-day | 1.0E-02 | mg/kg-day | 1.0E-02         |
|             |                 |                |                | VOC             | cis-1,2-Dichloroethylene  | 156-59-2 | N         | 3.5E+00 | 3.5E+00 | ug/L  | 5.4E-05                      | mg/kg-day |               |               |             | 1.1E-04                        | mg/kg-day | 2.0E-03 | mg/kg-day | 5.3E-02         | 1.8E-04           | mg/kg-day | 2.0E-03 | mg/kg-day | 8.8E-02         |
|             |                 |                |                | VOC             | Methyl Ethyl Ketone       | 78-93-3  | N         | 1.1E+02 | 1.1E+02 | ug/L  | 1.7E-03                      | mg/kg-day |               |               |             | 3.3E-03                        | mg/kg-day | 6.0E-01 | mg/kg-day | 5.4E-03         | 5.4E-03           | mg/kg-day | 6.0E-01 | mg/kg-day | 9.0E-03         |
|             |                 |                |                | VOC             | Tetrachloroethylene       | 127-18-4 | N         | 2.1E+01 | 2.1E+01 | ug/L  | 3.2E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 6.8E-07     | 6.3E-04                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.0E-01         | 1.0E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 1.7E-01         |
|             |                 |                |                | VOC             | Trichloroethylene         | 79-01-6  | Y         | 9.1E+00 | 9.1E+00 | ug/L  | 2.2E-04                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 1.0E-05     | 2.7E-04                        | mg/kg-day | 5.0E-04 | mg/kg-day | 5.4E-01         | 4.5E-04           | mg/kg-day | 5.0E-04 | mg/kg-day | 9.1E-01         |
|             |                 |                |                | VOC             | Vinyl chloride            | 75-01-4  | Y         | 5.3E-01 | 5.3E-01 | ug/L  | 3.6E-05                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 2.6E-05     | 1.6E-05                        | mg/kg-day | 3.0E-03 | mg/kg-day | 5.3E-03         | 2.7E-05           | mg/kg-day | 3.0E-03 | mg/kg-day | 8.9E-03         |
|             |                 |                |                | Ingestion Total |                           |          |           |         |         |       |                              |           |               |               | 3.9E-05     |                                |           |         |           | 7.2E-01         |                   |           |         |           | 1.2E+00         |

**Notes:**  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The age-adjustments for a resident's cancer risk are calculated in Table 4.Supp.1.  
The exposure intakes for MMOA chemicals (e.g., chromium) are adjusted for age are calculated in Tables 4.Supp.2.

**Abbreviations:**  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR - Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral or dermal reference dose  
UCL -- Upper confidence limit

TABLE 7.3A - MEMPHIS AQUIFER  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A WORKER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Worker  
Receptor Age: Adult

| Medium            | Exposure Medium | Exposure Point | Exposure Route | COPC Group      | COPC                 | CASRN    | EPC     |       | Cancer Risk Calculations |           |         |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |
|-------------------|-----------------|----------------|----------------|-----------------|----------------------|----------|---------|-------|--------------------------|-----------|---------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|
|                   |                 |                |                |                 |                      |          | Value   | Units | Exposure Intake          |           | CSF/IUR |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient |
|                   |                 |                |                |                 |                      |          |         |       | Value                    | Units     | Value   | Units         |             | Value                          | Units     | Value   | Units     |                 |
|                   |                 |                |                | VOC             | Carbon tetrachloride | 56-23-5  | 6.8E-01 | ug/L  | 2.6E-06                  | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 1.8E-07     | 7.3E-06                        | mg/kg-day | 4.0E-03 | mg/kg-day | 1.8E-03         |
|                   |                 |                |                | VOC             | Chloroform           | 67-66-3  | 2.1E-01 | ug/L  | 7.9E-07                  | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 2.4E-08     | 2.2E-06                        | mg/kg-day | 1.0E-02 | mg/kg-day | 2.2E-04         |
|                   |                 |                |                | VOC             | Tetrachloroethylene  | 127-18-4 | 3.7E+00 | ug/L  | 1.4E-05                  | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 3.0E-08     | 4.0E-05                        | mg/kg-day | 6.0E-03 | mg/kg-day | 6.6E-03         |
|                   |                 |                |                | VOC             | Trichloroethylene    | 79-01-6  | 2.0E+00 | ug/L  | 7.7E-06                  | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 3.5E-07     | 2.2E-05                        | mg/kg-day | 5.0E-04 | mg/kg-day | 4.3E-02         |
|                   |                 |                |                | Ingestion Total |                      |          |         |       |                          |           |         |               |             |                                |           | 5.9E-07 | 5.2E-02   |                 |
| Groundwater       | Groundwater     | Tapwater       | Dermal         | VOC             | Carbon tetrachloride | 56-23-5  | 6.8E-01 | ug/L  | 2.9E-07                  | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 2.0E-08     | 8.1E-07                        | mg/kg-day | 4.0E-03 | mg/kg-day | 2.0E-04         |
|                   |                 |                |                | VOC             | Chloroform           | 67-66-3  | 2.1E-01 | ug/L  | 2.9E-08                  | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 9.1E-10     | 8.2E-08                        | mg/kg-day | 1.0E-02 | mg/kg-day | 8.2E-06         |
|                   |                 |                |                | VOC             | Tetrachloroethylene  | 127-18-4 | 3.7E+00 | ug/L  | 3.5E-06                  | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 7.3E-09     | 9.7E-06                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.6E-03         |
|                   |                 |                |                | VOC             | Trichloroethylene    | 79-01-6  | 2.0E+00 | ug/L  | 5.3E-07                  | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 2.4E-08     | 1.5E-06                        | mg/kg-day | 5.0E-04 | mg/kg-day | 3.0E-03         |
|                   |                 |                |                | Dermal Total    |                      |          |         |       |                          |           |         |               |             |                                |           | 5.3E-08 | 4.8E-03   |                 |
| Groundwater Total |                 |                |                |                 |                      |          |         |       |                          |           |         | 6.4E-07       | 5.7E-02     |                                |           |         |           |                 |
| Receptor Total    |                 |                |                |                 |                      |          |         |       |                          |           |         | 6.4E-07       | 5.7E-02     |                                |           |         |           |                 |

**Notes:**  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2"s".  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The DAvent values for dermal exposure to groundwater are calculated in Table 4.Supp.3.

**Abbreviations:**  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR -- Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral reference dose

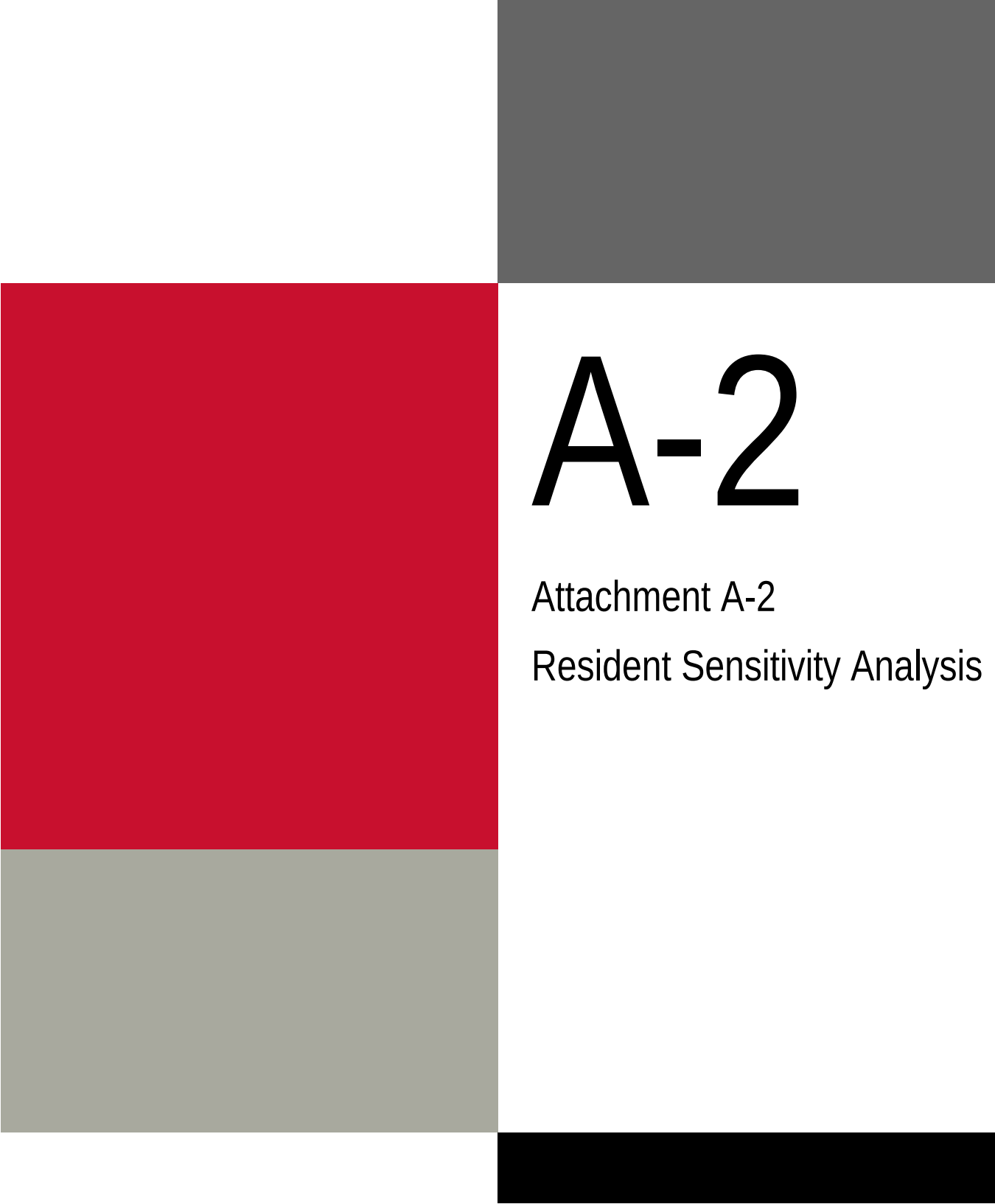
TABLE 7.3B - MEMPHIS AQUIFER  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium          | Exposure Medium | Exposure Point | Exposure Route | COPC Group | COPC                 | CASRN    | Mutagenic | EPC     |         |       | Cancer Risk Calculations     |             |               |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |                   |           |         |           |                 |
|-----------------|-----------------|----------------|----------------|------------|----------------------|----------|-----------|---------|---------|-------|------------------------------|-------------|---------------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|
|                 |                 |                |                |            |                      |          |           | Adult   | Child   | Units | Adult and Child Age-Adjusted |             |               |               |             | Adult                          |           |         |           |                 | Child (0-6 years) |           |         |           |                 |
|                 |                 |                |                |            |                      |          |           |         |         |       | Exposure Intake              |             | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |
|                 |                 |                |                |            |                      |          |           |         |         |       | Value                        | Units       | Value         | Units         |             | Value                          | Units     | Value   | Units     |                 | Value             | Units     |         |           |                 |
|                 |                 |                |                |            |                      |          |           |         |         |       |                              |             |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |
| Groundwater     | Groundwater     | Tapwater       | Ingestion      | VOC        | Carbon tetrachloride | 56-23-5  | N         | 6.8E-01 | 6.8E-01 | ug/L  | 1.1E-05                      | mg/kg-day   | 7.0E-02       | (mg/kg-day)-1 | 7.4E-07     | 2.0E-05                        | mg/kg-day | 4.0E-03 | mg/kg-day | 5.1E-03         | 3.4E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 8.5E-03         |
|                 |                 |                |                | VOC        | Chloroform           | 67-66-3  | N         | 2.1E-01 | 2.1E-01 | ug/L  | 3.2E-06                      | mg/kg-day-1 | 3.1E-02       | (mg/kg-day)-1 | 9.8E-08     | 6.2E-06                        | mg/kg-day | 1.0E-02 | mg/kg-day | 6.2E-04         | 1.0E-05           | mg/kg-day | 1.0E-02 | mg/kg-day | 1.0E-03         |
|                 |                 |                |                | VOC        | Tetrachloroethylene  | 127-18-4 | N         | 3.7E+00 | 3.7E+00 | ug/L  | 5.7E-05                      | mg/kg-day   | 2.1E-03       | (mg/kg-day)-1 | 1.2E-07     | 1.1E-04                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.8E-02         | 1.8E-04           | mg/kg-day | 6.0E-03 | mg/kg-day | 3.1E-02         |
|                 |                 |                |                | VOC        | Trichloroethylene    | 79-01-6  | Y         | 2.0E+00 | 2.0E+00 | ug/L  | 4.8E-05                      | mg/kg-day   | 4.6E-02       | (mg/kg-day)-1 | 2.2E-06     | 6.1E-05                        | mg/kg-day | 5.0E-04 | mg/kg-day | 1.2E-01         | 1.0E-04           | mg/kg-day | 5.0E-04 | mg/kg-day | 2.0E-01         |
| Ingestion Total |                 |                |                |            |                      |          |           |         |         |       | 3.2E-06                      |             |               |               |             | 1.5E-01                        |           |         |           |                 | 2.4E-01           |           |         |           |                 |

**Notes:**  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The age-adjustments for a resident's cancer risk are calculated in Table 4.Supp.1.  
The exposure intakes for MMOA chemicals (e.g., chromium) are adjusted for age are calculated in Tables 4.Supp.2.

**Abbreviations:**  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR - Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral or dermal reference dose  
UCL -- Upper confidence limit

A decorative graphic consisting of several overlapping rectangles. A large red rectangle is on the left. A grey rectangle is at the top right. A light grey rectangle is at the bottom left. A black rectangle is at the bottom right. The text is positioned to the right of the red rectangle.

# A-2

Attachment A-2

Resident Sensitivity Analysis

**ATTACHMENT A-2 TABLE OF CONTENTS:**

**Table 4.Supp.4A Bathroom Air Concentrations from Exposure to Tapwater for a Resident using Groundwater – Fluvial Aquifer**

**Table 4.Supp.4B Bathroom Air Concentrations from Exposure to Tapwater for a Resident using Groundwater – Intermediate Aquifer**

**Table 4.Supp.4C Bathroom Air Concentrations from Exposure to Tapwater for a Resident using Groundwater – Memphis Aquifer**

**Table 7.4            Resident Sensitivity: Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident – Fluvial Aquifer**

**Table 7.5            Resident Sensitivity: Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident – Intermediate Aquifer**

**Table 7.6            Resident Sensitivity: Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident – Memphis Aquifer**

TABLE 4.SUPP.4A  
BATHROOM AIR CONCENTRATIONS FROM EXPOSURE TO TAPWATER FOR A RESIDENT USING GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN     | EPC<br>(1) | Adult              |                   | Child (0-6 years)  |                   |
|------------|----------------------------------|-----------|------------|--------------------|-------------------|--------------------|-------------------|
|            |                                  |           | CW         | C <sub>a-max</sub> | C <sub>a</sub>    | C <sub>a-max</sub> | C <sub>a</sub>    |
|            |                                  |           | mg/L       | mg/m <sup>3</sup>  | mg/m <sup>3</sup> | mg/m <sup>3</sup>  | mg/m <sup>3</sup> |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | 0.0002     | 0.009              | 0.007             | 0.012              | 0.008             |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | 0.00074    | 0.028              | 0.023             | 0.037              | 0.026             |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | 0.001629   | 0.061              | 0.050             | 0.081              | 0.056             |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | 0.14200    | 5.325              | 4.388             | 7.029              | 4.881             |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | 0.0004     | 0.017              | 0.014             | 0.022              | 0.015             |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | 0.00054    | 0.020              | 0.017             | 0.026              | 0.018             |
| VOC        | Acetone                          | 67-64-1   | 0.2423     | 9.086              | 7.487             | 11.994             | 8.329             |
| VOC        | Carbon tetrachloride             | 56-23-5   | 0.00507    | 0.190              | 0.157             | 0.251              | 0.174             |
| VOC        | Chloroform                       | 67-66-3   | 0.1760     | 6.600              | 5.438             | 8.712              | 6.050             |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | 0.0253     | 0.949              | 0.782             | 1.252              | 0.870             |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | 0.65700    | 24.638             | 20.300            | 32.522             | 22.584            |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | 0.0055     | 0.206              | 0.169             | 0.271              | 0.188             |
| VOC        | Methylene chloride               | 75-09-2   | 0.177      | 6.64               | 5.47              | 8.762              | 6.084             |
| VOC        | Tetrachloroethylene              | 127-18-4  | 0.0266     | 0.998              | 0.822             | 1.317              | 0.914             |
| VOC        | Toluene                          | 108-88-3  | 0.00113    | 0.042              | 0.035             | 0.056              | 0.039             |
| VOC        | Trichloroethylene                | 79-01-6   | 0.014      | 0.510              | 0.420             | 0.673              | 0.468             |
| VOC        | Vinyl chloride                   | 75-01-4   | 0.005      | 0.17               | 0.14              | 0.23               | 0.16              |

| Variables                                                     | Units             | Exposure Assumptions |
|---------------------------------------------------------------|-------------------|----------------------|
| C <sub>a</sub> = concentration of chemical in air             | mg/m <sup>3</sup> | Solved by Eq 1       |
| C <sub>a-max</sub> = maximum concentration of chemical in air | mg/m <sup>3</sup> | Solved by Eq 2       |
| t <sub>1</sub> = Adult time in shower                         | hr                | 0.25                 |
| t <sub>1</sub> = Child time in shower                         | hr                | 0.33                 |
| t <sub>2</sub> = Adult time in bathroom after shower          | hr                | 0.46                 |
| t <sub>2</sub> = Child time in bathroom after shower          | hr                | 0.21                 |
| f = fraction volatilized for chemical                         | unitless          | 0.9                  |
| F <sub>w</sub> = shower water flow rate                       | L/hr              | 1000                 |
| V <sub>a</sub> = bathroom volume                              | m <sup>3</sup>    | 6                    |

|             |                      |                                                                                                                        |
|-------------|----------------------|------------------------------------------------------------------------------------------------------------------------|
| Equation 1: | C <sub>a</sub> =     | ((C <sub>a-max</sub> /2) * t <sub>1</sub> + C <sub>a-max</sub> * t <sub>2</sub> ) / (t <sub>1</sub> + t <sub>2</sub> ) |
| Equation 2: | C <sub>a-max</sub> = | (C <sub>w</sub> * f * F <sub>w</sub> * t <sub>1</sub> ) / V <sub>a</sub>                                               |

**Note:**

(1) The EPC is the lower of the 95% UCL and maximum detected concentration - see Table 3s.

The most conservative value of the ranges for each exposure parameter, as presented in Schaum et al 1994, is applied for the calculations. The shower model air chemical concentrations are calculated for only VOCs.

Total exposure times for are 0.71 hr for an adult and 0.54 hr for a child (0-6 years). Professional judgement is used to split up the time spent in the shower versus in the bathroom after shower. An adult is assumed to spend approximately 15 minutes showering followed by 28 minutes in the bathroom, for a total of 43 minutes (0.71 hr). A child is assumed to spend approximately 20 minutes bathing followed by 13 minutes in the bathroom for a total of 32 minutes (0.54 hr).

**Abbreviation:**

CW -- Groundwater water concentration

EPC -- Exposure point concentration

VOC -- Volatile organic compound

**Reference:**

Wang, Rhoda G.M. et al. 1994. Water Consumption and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment. Wang. Marcel Dekker, Inc., New York. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water, Schaum et al., Pages 307-320.



TABLE 4.SUPP.4B  
BATHROOM AIR CONCENTRATIONS FROM EXPOSURE TO TAPWATER FOR A RESIDENT USING GROUNDWATER - INTERMEDIATE/UPPER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN    | EPC<br>(1) | Adult              |                   | Child (0-6 years)  |                   |
|------------|----------------------------------|----------|------------|--------------------|-------------------|--------------------|-------------------|
|            |                                  |          | CW         | C <sub>a-max</sub> | C <sub>a</sub>    | C <sub>a-max</sub> | C <sub>a</sub>    |
|            |                                  |          | mg/L       | mg/m <sup>3</sup>  | mg/m <sup>3</sup> | mg/m <sup>3</sup>  | mg/m <sup>3</sup> |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5  | 0.0002     | 0.008              | 0.006             | 0.010              | 0.007             |
| VOC        | Carbon tetrachloride             | 56-23-5  | 0.00039    | 0.015              | 0.012             | 0.019              | 0.013             |
| VOC        | Chloroform                       | 67-66-3  | 0.0021     | 0.078              | 0.064             | 0.102              | 0.071             |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2 | 0.0035     | 0.132              | 0.109             | 0.175              | 0.121             |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | 0.10850    | 4.069              | 3.352             | 5.371              | 3.730             |
| VOC        | Tetrachloroethylene              | 127-18-4 | 0.0209     | 0.785              | 0.647             | 1.037              | 0.720             |
| VOC        | Trichloroethylene                | 79-01-6  | 0.009      | 0.340              | 0.280             | 0.449              | 0.312             |
| VOC        | Vinyl chloride                   | 75-01-4  | 0.001      | 0.02               | 0.02              | 0.03               | 0.02              |

| Variables                                                     | Units             | Exposure Assumptions |
|---------------------------------------------------------------|-------------------|----------------------|
| C <sub>a</sub> = concentration of chemical in air             | mg/m <sup>3</sup> | Solved by Eq 1       |
| C <sub>a-max</sub> = maximum concentration of chemical in air | mg/m <sup>3</sup> | Solved by Eq 2       |
| t <sub>1</sub> = Adult time in shower                         | hr                | 0.25                 |
| t <sub>1</sub> = Child time in shower                         | hr                | 0.33                 |
| t <sub>2</sub> = Adult time in bathroom after shower          | hr                | 0.46                 |
| t <sub>2</sub> = Child time in bathroom after shower          | hr                | 0.21                 |
| f = fraction volatilized for chemical                         | unitless          | 0.9                  |
| F <sub>w</sub> = shower water flow rate                       | L/hr              | 1000                 |
| V <sub>a</sub> = bathroom volume                              | m <sup>3</sup>    | 6                    |

|             |                      |                                                         |
|-------------|----------------------|---------------------------------------------------------|
| Equation 1: | C <sub>a</sub> =     | $((C_{a-max}/2) * t_1 + C_{a-max} * t_2) / (t_1 + t_2)$ |
| Equation 2: | C <sub>a-max</sub> = | $(C_w * f * F_w * t_1) / V_a$                           |

**Note:**

(1) The EPC is the lower of the 95% UCL and maximum detected concentration - see Table 3s.

The most conservative value of the ranges for each exposure parameter, as presented in Schaum et al 1994, is applied for the calculations. The shower model air chemical concentrations are calculated for only VOCs.

Total exposure times for are 0.71 hr for an adult and 0.54 hr for a child (0-6 years). Professional judgement is used to split up the time spent in the shower versus in the bathroom after shower. An adult is assumed to spend approximately 15 minutes showering followed by 28 minutes in the bathroom, for a total of 43 minutes (0.71 hr). A child is assumed to spend approximately 20 minutes bathing followed by 13 minutes in the bathroom for a total of 32 minutes (0.54 hr).

**Abbreviation:**

CW -- Groundwater water concentration

EPC -- Exposure point concentration

VOC -- Volatile organic compound

**Reference:**

Wang, Rhoda G.M. et al. 1994. Water Consumption and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment. Wang. Macel Dekker, Inc., New York. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water, Schaum et al., Pages 307-320.

TABLE 4.SUPP.4C  
BATHROOM AIR CONCENTRATIONS FROM EXPOSURE TO TAPWATER FOR A RESIDENT USING GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                 | CASRN    | EPC<br>(1) | Adult              |                   | Child (0-6 years)  |                   |
|------------|----------------------|----------|------------|--------------------|-------------------|--------------------|-------------------|
|            |                      |          | CW         | C <sub>a-max</sub> | C <sub>a</sub>    | C <sub>a-max</sub> | C <sub>a</sub>    |
|            |                      |          | mg/L       | mg/m <sup>3</sup>  | mg/m <sup>3</sup> | mg/m <sup>3</sup>  | mg/m <sup>3</sup> |
| VOC        | Carbon tetrachloride | 56-23-5  | 0.00068    | 0.026              | 0.021             | 0.034              | 0.023             |
| VOC        | Chloroform           | 67-66-3  | 0.0002     | 0.008              | 0.006             | 0.010              | 0.007             |
| VOC        | Tetrachloroethylene  | 127-18-4 | 0.0037     | 0.139              | 0.114             | 0.183              | 0.127             |
| VOC        | Trichloroethylene    | 79-01-6  | 0.002      | 0.076              | 0.062             | 0.100              | 0.069             |

| Variables                                                     | Units             | Exposure Assumptions |
|---------------------------------------------------------------|-------------------|----------------------|
| C <sub>a</sub> = concentration of chemical in air             | mg/m <sup>3</sup> | Solved by Eq 1       |
| C <sub>a-max</sub> = maximum concentration of chemical in air | mg/m <sup>3</sup> | Solved by Eq 2       |
| t <sub>1</sub> = Adult time in shower                         | hr                | 0.25                 |
| t <sub>1</sub> = Child time in shower                         | hr                | 0.33                 |
| t <sub>2</sub> = Adult time in bathroom after shower          | hr                | 0.46                 |
| t <sub>2</sub> = Child time in bathroom after shower          | hr                | 0.21                 |
| f = fraction volatilized for chemical                         | unitless          | 0.9                  |
| F <sub>w</sub> = shower water flow rate                       | L/hr              | 1000                 |
| V <sub>a</sub> = bathroom volume                              | m <sup>3</sup>    | 6                    |

|             |                      |                                                         |
|-------------|----------------------|---------------------------------------------------------|
| Equation 1: | C <sub>a</sub> =     | $((C_{a-max}/2) * t_1 + C_{a-max} * t_2) / (t_1 + t_2)$ |
| Equation 2: | C <sub>a-max</sub> = | $(C_w * f * F_w * t_1) / V_a$                           |

**Note:**

(1) The EPC is the lower of the 95% UCL and maximum detected concentration - see Table 3s.

The most conservative value of the ranges for each exposure parameter, as presented in Schaum et al 1994, is applied for the calculations. The shower model air chemical concentrations are calculated for only VOCs.

Total exposure times for are 0.71 hr for an adult and 0.54 hr for a child (0-6 years). Professional judgement is used to split up the time spent in the shower versus in the bathroom after shower. An adult is assumed to spend approximately 15 minutes showering followed by 28 minutes in the bathroom, for a total of 43 minutes (0.71 hr). A child is assumed to spend approximately 20 minutes bathing followed by 13 minutes in the bathroom for a total of 32 minutes (0.54 hr).

**Abbreviation:**

CW -- Groundwater water concentration

EPC -- Exposure point concentration

VOC -- Volatile organic compound

**Reference:**

Wang, Rhoda G.M. et al. 1994. Water Consumption and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment. Wang. Macel Dekker, Inc., New York. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water, Schaum et al., Pages 307-320.

TABLE 7.4 - FLUVIAL AQUIFER  
RESIDENT SENSITIVITY: CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium                       | Exposure Medium          | Exposure Point           | Exposure Route | COPC Group      | COPC                      | CASRN     | Mutagenic | EPC     |                           |           | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |           |               |           |                 |                   |           |           |           |                 |           |         |           |         |
|------------------------------|--------------------------|--------------------------|----------------|-----------------|---------------------------|-----------|-----------|---------|---------------------------|-----------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|-----------|---------------|-----------|-----------------|-------------------|-----------|-----------|-----------|-----------------|-----------|---------|-----------|---------|
|                              |                          |                          |                |                 |                           |           |           | Adult   | Child                     | Units     | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |           |               |           |                 | Child (0-6 years) |           |           |           |                 |           |         |           |         |
|                              |                          |                          |                |                 |                           |           |           |         |                           |           | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC       |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC   |           | Hazard Quotient |           |         |           |         |
|                              |                          |                          |                |                 |                           |           |           |         |                           |           | Value                        | Value     | Units         | Value         |             | Units                          | Value     | Units         | Value     |                 | Units             | Value     | Units     | Value     |                 | Units     |         |           |         |
| Groundwater                  | Groundwater              | Tapwater                 | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane | 79-34-5   | N         | 2.4E-01 | 2.4E-01                   | ug/L      | 3.7E-06                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 7.5E-07     | 7.3E-06                        | mg/kg-day | 2.0E-02       | mg/kg-day | 3.6E-04         | 1.2E-05           | mg/kg-day | 2.0E-02   | mg/kg-day | 6.0E-04         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,1-Dichloroethene        | 75-35-4   | N         | 7.4E-01 | 7.4E-01                   | ug/L      | 1.1E-05                      | mg/kg-day |               |               |             | 2.2E-05                        | mg/kg-day | 5.0E-02       | mg/kg-day | 4.5E-04         | 3.7E-05           | mg/kg-day | 5.0E-02   | mg/kg-day | 7.4E-04         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2,3-Trichloropropane    | 96-18-4   | Y         | 1.6E+00 | 1.6E+00                   | ug/L      | 9.3E-05                      | mg/kg-day | 3.0E+01       | (mg/kg-day)-1 | 2.8E-03     | 4.9E-05                        | mg/kg-day | 4.0E-03       | mg/kg-day | 1.2E-02         | 8.1E-05           | mg/kg-day | 4.0E-03   | mg/kg-day | 2.0E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2,4-Trimethylbenzene    | 95-63-6   | N         | 1.4E+02 | 1.4E+02                   | ug/L      | 2.2E-03                      | mg/kg-day |               |               |             | 4.3E-03                        | mg/kg-day | 1.0E-02       | mg/kg-day | 4.3E-01         | 7.1E-03           | mg/kg-day | 1.0E-02   | mg/kg-day | 7.1E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2-Dichloroethane        | 107-06-2  | N         | 4.5E-01 | 4.5E-01                   | ug/L      | 6.9E-06                      | mg/kg-day | 9.1E-02       | (mg/kg-day)-1 | 6.3E-07     | 1.3E-05                        | mg/kg-day | 6.0E-03       | mg/kg-day | 2.2E-03         | 2.2E-05           | mg/kg-day | 6.0E-03   | mg/kg-day | 3.7E-03         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2-Dichloropropane       | 78-87-5   | N         | 5.4E-01 | 5.4E-01                   | ug/L      | 8.2E-06                      | mg/kg-day | 3.7E-02       | (mg/kg-day)-1 | 3.1E-07     | 1.6E-05                        | mg/kg-day | 4.0E-02       | mg/kg-day | 4.0E-04         | 2.7E-05           | mg/kg-day | 4.0E-02   | mg/kg-day | 6.7E-04         |           |         |           |         |
|                              |                          |                          |                | VOC             | Acetone                   | 67-64-1   | N         | 2.4E+02 | 2.4E+02                   | ug/L      | 3.7E-03                      | mg/kg-day |               |               |             | 7.3E-03                        | mg/kg-day | 9.0E-01       | mg/kg-day | 8.1E-03         | 1.2E-02           | mg/kg-day | 9.0E-01   | mg/kg-day | 1.3E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | Carbon tetrachloride      | 56-23-5   | N         | 5.1E+00 | 5.1E+00                   | ug/L      | 7.8E-05                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 5.5E-06     | 1.5E-04                        | mg/kg-day | 4.0E-03       | mg/kg-day | 3.8E-02         | 2.5E-04           | mg/kg-day | 4.0E-03   | mg/kg-day | 6.3E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | Chloroform                | 67-66-3   | N         | 1.8E+02 | 1.8E+02                   | ug/L      | 2.7E-03                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 8.4E-05     | 5.3E-03                        | mg/kg-day | 1.0E-02       | mg/kg-day | 5.3E-01         | 8.8E-03           | mg/kg-day | 1.0E-02   | mg/kg-day | 8.8E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | cis-1,2-Dichloroethylene  | 156-59-2  | N         | 2.5E+01 | 2.5E+01                   | ug/L      | 3.9E-04                      | mg/kg-day |               |               |             | 7.6E-04                        | mg/kg-day | 2.0E-03       | mg/kg-day | 3.8E-01         | 1.3E-03           | mg/kg-day | 2.0E-03   | mg/kg-day | 6.3E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | Methyl Ethyl Ketone       | 78-93-3   | N         | 6.6E+02 | 6.6E+02                   | ug/L      | 1.0E-02                      | mg/kg-day |               |               |             | 2.0E-02                        | mg/kg-day | 6.0E-01       | mg/kg-day | 3.3E-02         | 3.3E-02           | mg/kg-day | 6.0E-01   | mg/kg-day | 5.5E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | Methyl tert-butyl ether   | 1634-04-4 | N         | 5.5E+00 | 5.5E+00                   | ug/L      | 8.5E-05                      | mg/kg-day | 1.8E-03       | (mg/kg-day)-1 | 1.5E-07     | 1.6E-04                        | mg/kg-day |               |           |                 | 2.7E-04           | mg/kg-day |           |           |                 |           |         |           |         |
|                              |                          |                          |                | VOC             | Methylene chloride        | 75-09-2   | Y         | 1.8E+02 | 1.8E+02                   | ug/L      | 1.0E-02                      | mg/kg-day | 2.0E-03       | (mg/kg-day)-1 | 2.0E-05     | 5.3E-03                        | mg/kg-day | 6.0E-03       | mg/kg-day | 8.8E-01         | 8.8E-03           | mg/kg-day | 6.0E-03   | mg/kg-day | 1.5E+00         |           |         |           |         |
|                              |                          |                          |                | VOC             | Tetrachloroethylene       | 127-18-4  | N         | 2.7E+01 | 2.7E+01                   | ug/L      | 4.1E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 8.6E-07     | 8.0E-04                        | mg/kg-day | 6.0E-03       | mg/kg-day | 1.3E-01         | 1.3E-03           | mg/kg-day | 6.0E-03   | mg/kg-day | 2.2E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | Toluene                   | 108-88-3  | N         | 1.1E+00 | 1.1E+00                   | ug/L      | 1.7E-05                      | mg/kg-day |               |               |             | 3.4E-05                        | mg/kg-day | 8.0E-02       | mg/kg-day | 4.2E-04         | 5.6E-05           | mg/kg-day | 8.0E-02   | mg/kg-day | 7.0E-04         |           |         |           |         |
|                              |                          |                          |                | VOC             | Trichloroethylene         | 79-01-6   | Y         | 1.4E+01 | 1.4E+01                   | ug/L      | 3.2E-04                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 1.5E-05     | 4.1E-04                        | mg/kg-day | 5.0E-04       | mg/kg-day | 8.2E-01         | 6.8E-04           | mg/kg-day | 5.0E-04   | mg/kg-day | 1.4E+00         |           |         |           |         |
|                              |                          |                          |                | VOC             | Vinyl chloride            | 75-01-4   | Y         | 4.6E+00 | 4.6E+00                   | ug/L      | 3.1E-04                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 2.2E-04     | 1.4E-04                        | mg/kg-day | 3.0E-03       | mg/kg-day | 4.6E-02         | 2.3E-04           | mg/kg-day | 3.0E-03   | mg/kg-day | 7.7E-02         |           |         |           |         |
|                              |                          |                          |                | Ingestion Total |                           |           |           |         |                           |           |                              |           |               |               | 3.1E-03     |                                |           |               |           |                 | 3.3E+00           |           |           |           |                 |           | 5.5E+00 |           |         |
|                              |                          |                          |                | Groundwater     | Groundwater               | Tapwater  | Dermal    | VOC     | 1,1,2,2-Tetrachloroethane | 79-34-5   | N                            | 2.4E-01   | 2.4E-01       | ug/L          | 4.0E-07     | mg/kg-day                      | 2.0E-01   | (mg/kg-day)-1 | 8.0E-08   | 8.8E-07         | mg/kg-day         | 2.0E-02   | mg/kg-day | 4.4E-05   | 1.3E-06         | mg/kg-day | 2.0E-02 | mg/kg-day | 6.6E-05 |
|                              |                          |                          |                |                 |                           |           |           | VOC     | 1,1-Dichloroethene        | 75-35-4   | N                            | 7.4E-01   | 7.4E-01       | ug/L          | 1.3E-06     | mg/kg-day                      |           |               |           | 2.9E-06         | mg/kg-day         | 5.0E-02   | mg/kg-day | 5.8E-05   | 4.4E-06         | mg/kg-day | 5.0E-02 | mg/kg-day | 8.7E-05 |
| VOC                          | 1,2,3-Trichloropropane   | 96-18-4                  | Y              |                 |                           |           |           | 1.6E+00 | 1.6E+00                   | ug/L      | 8.1E-06                      | mg/kg-day | 3.0E+01       | (mg/kg-day)-1 | 2.4E-04     | 5.6E-06                        | mg/kg-day | 4.0E-03       | mg/kg-day | 1.4E-03         | 8.5E-06           | mg/kg-day | 4.0E-03   | mg/kg-day | 2.1E-03         |           |         |           |         |
| VOC                          | 1,2,4-Trimethylbenzene   | 95-63-6                  | N              |                 |                           |           |           | 1.4E+02 | 1.4E+02                   | ug/L      | 2.1E-03                      | mg/kg-day |               |               |             | 4.7E-03                        | mg/kg-day | 1.0E-02       | mg/kg-day | 4.7E-01         | 7.1E-03           | mg/kg-day | 1.0E-02   | mg/kg-day | 7.1E-01         |           |         |           |         |
| VOC                          | 1,2-Dichloroethane       | 107-06-2                 | N              |                 |                           |           |           | 4.5E-01 | 4.5E-01                   | ug/L      | 2.9E-07                      | mg/kg-day | 9.1E-02       | (mg/kg-day)-1 | 2.6E-08     | 6.3E-07                        | mg/kg-day | 6.0E-03       | mg/kg-day | 1.1E-04         | 9.5E-07           | mg/kg-day | 6.0E-03   | mg/kg-day | 1.6E-04         |           |         |           |         |
| VOC                          | 1,2-Dichloropropane      | 78-87-5                  | N              |                 |                           |           |           | 5.4E-01 | 5.4E-01                   | ug/L      | 6.8E-07                      | mg/kg-day | 3.7E-02       | (mg/kg-day)-1 | 2.5E-08     | 1.5E-06                        | mg/kg-day | 4.0E-02       | mg/kg-day | 3.7E-05         | 2.2E-06           | mg/kg-day | 4.0E-02   | mg/kg-day | 5.6E-05         |           |         |           |         |
| VOC                          | Acetone                  | 67-64-1                  | N              |                 |                           |           |           | 2.4E+02 | 2.4E+02                   | ug/L      | 1.5E-05                      | mg/kg-day |               |               |             | 3.4E-05                        | mg/kg-day | 9.0E-01       | mg/kg-day | 3.7E-05         | 5.0E-05           | mg/kg-day | 9.0E-01   | mg/kg-day | 5.5E-05         |           |         |           |         |
| VOC                          | Carbon tetrachloride     | 56-23-5                  | N              |                 |                           |           |           | 5.1E+00 | 5.1E+00                   | ug/L      | 1.8E-05                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 1.3E-06     | 4.0E-05                        | mg/kg-day | 4.0E-03       | mg/kg-day | 9.9E-03         | 6.0E-05           | mg/kg-day | 4.0E-03   | mg/kg-day | 1.5E-02         |           |         |           |         |
| VOC                          | Chloroform               | 67-66-3                  | N              |                 |                           |           |           | 1.8E+02 | 1.8E+02                   | ug/L      | 2.1E-04                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 6.5E-06     | 4.6E-04                        | mg/kg-day | 1.0E-02       | mg/kg-day | 4.6E-02         | 7.0E-04           | mg/kg-day | 1.0E-02   | mg/kg-day | 7.0E-02         |           |         |           |         |
| VOC                          | cis-1,2-Dichloroethylene | 156-59-2                 | N              |                 |                           |           |           | 2.5E+01 | 2.5E+01                   | ug/L      | 4.2E-05                      | mg/kg-day |               |               |             | 9.2E-05                        | mg/kg-day | 2.0E-03       | mg/kg-day | 4.6E-02         | 1.4E-04           | mg/kg-day | 2.0E-03   | mg/kg-day | 7.0E-02         |           |         |           |         |
| VOC                          | Methyl Ethyl Ketone      | 78-93-3                  | N              |                 |                           |           |           | 6.6E+02 | 6.6E+02                   | ug/L      | 8.3E-05                      | mg/kg-day |               |               |             | 1.8E-04                        | mg/kg-day | 6.0E-01       | mg/kg-day | 3.1E-04         | 2.7E-04           | mg/kg-day | 6.0E-01   | mg/kg-day | 4.5E-04         |           |         |           |         |
| VOC                          | Methyl tert-butyl ether  | 1634-04-4                | N              |                 |                           |           |           | 5.5E+00 | 5.5E+00                   | ug/L      | 1.7E-06                      | mg/kg-day | 1.8E-03       | (mg/kg-day)-1 | 3.0E-09     | 3.6E-06                        | mg/kg-day |               |           |                 | 5.5E-06           | mg/kg-day |           |           |                 |           |         |           |         |
| VOC                          | Methylene chloride       | 75-09-2                  | Y              |                 |                           |           |           | 1.8E+02 | 1.8E+02                   | ug/L      | 2.8E-04                      | mg/kg-day | 2.0E-03       | (mg/kg-day)-1 | 5.5E-07     | 1.9E-04                        | mg/kg-day | 6.0E-03       | mg/kg-day | 3.2E-02         | 2.9E-04           | mg/kg-day | 6.0E-03   | mg/kg-day | 4.8E-02         |           |         |           |         |
| VOC                          | Tetrachloroethylene      | 127-18-4                 | N              |                 |                           |           |           | 2.7E+01 | 2.7E+01                   | ug/L      | 2.1E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 4.4E-07     | 4.6E-04                        | mg/kg-day | 6.0E-03       | mg/kg-day | 7.7E-02         | 6.9E-04           | mg/kg-day | 6.0E-03   | mg/kg-day | 1.2E-01         |           |         |           |         |
| VOC                          | Toluene                  | 108-88-3                 | N              |                 |                           |           |           | 1.1E+00 | 1.1E+00                   | ug/L      | 5.1E-06                      | mg/kg-day |               |               |             | 1.1E-05                        | mg/kg-day | 8.0E-02       | mg/kg-day | 1.4E-04         | 1.7E-05           | mg/kg-day | 8.0E-02   | mg/kg-day | 2.1E-04         |           |         |           |         |
| VOC                          | Trichloroethylene        | 79-01-6                  | Y              |                 |                           |           |           | 1.4E+01 | 1.4E+01                   | ug/L      | 4.3E-05                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 2.0E-06     | 6.5E-05                        | mg/kg-day | 5.0E-04       | mg/kg-day | 1.3E-01         | 9.9E-05           | mg/kg-day | 5.0E-04   | mg/kg-day | 2.0E-01         |           |         |           |         |
| VOC                          | Vinyl chloride           | 75-01-4                  | Y              |                 |                           |           |           | 4.6E+00 | 4.6E+00                   | ug/L      | 2.1E-05                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 1.5E-05     | 1.1E-05                        | mg/kg-day | 3.0E-03       | mg/kg-day | 3.6E-03         | 1.6E-05           | mg/kg-day | 3.0E-03   | mg/kg-day | 5.2E-03         |           |         |           |         |
| Dermal Total                 |                          |                          |                |                 |                           |           |           |         |                           |           | 2.7E-04                      |           |               |               |             |                                | 8.2E-01   |               |           |                 |                   |           | 1.2E+00   |           |                 |           |         |           |         |
| Groundwater                  | Groundwater              | Water Vapors in Bathroom | Inhalation     |                 |                           |           |           | VOC     | 1,1,2,2-Tetrachloroethane | 79-34-5   | N                            | 4.2E-03   | 4.6E-03       | mg/m3         | 4.2E-05     | mg/m3                          | 5.8E-02   | (mg/m3)-1     | 2.4E-06   | 1.2E-04         | mg/m3             |           |           |           | 1.0E-04         | mg/m3     |         |           |         |
|                              |                          |                          |                |                 |                           |           |           | VOC     | 1,1-Dichloroethene        | 75-35-4   | N                            | 1.3E-02   | 1.4E-02       | mg/m3         | 1.3E-04     | mg/m3                          |           |               |           | 3.6E-04         | mg/m3             | 2.0E-01   | mg/m3     | 1.8E-03   | 3.1E-04         | mg/m3     | 2.0E-01 | mg/m3     | 1.5E-03 |
|                              |                          |                          |                | VOC             | 1,2,3-Trichloropropane    | 96-18-4   | Y         | 2.8E-02 | 3.1E-02                   | mg/m3     | 1.5E-03                      | mg/m3     |               |               |             | 7.9E-04                        | mg/m3     | 3.0E-04       | mg/m3     | 2.6E+00         | 6.7E-04           | mg/m3     | 3.0E-04   | mg/m3     | 2.2E+00         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2,4-Trimethylbenzene    | 95-63-6   | N         | 2.4E+00 | 2.7E+00                   | mg/m3     | 2.5E-02                      | mg/m3     |               |               |             | 6.9E-02                        | mg/m3     | 6.0E-02       | mg/m3     | 1.2E+00         | 5.9E-02           | mg/m3     | 6.0E-02   | mg/m3     | 9.8E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2-Dichloroethane        | 107-06-2  | N         | 7.7E-03 | 8.5E-03                   | mg/m3     | 7.8E-05                      | mg/m3     | 2.6E-02       | (mg/m3)-1     | 2.0E-06     | 2.2E-04                        | mg/m3     | 7.0E-03       | mg/m3     | 3.1E-02         | 1.8E-04           | mg/m3     | 7.0E-03   | mg/m3     | 2.6E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | 1,2-Dichloropropane       | 78-87-5   | N         | 9.2E-03 | 1.0E-02                   | mg/m3     | 9.3E-05                      | mg/m3     | 3.7E-02       | (mg/m3)-1     | 3.5E-06     | 2.6E-04                        | mg/m3     | 4.0E-03       | mg/m3     | 6.5E-02         | 2.2E-04           | mg/m3     | 4.0E-03   | mg/m3     | 5.5E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | Acetone                   | 67-64-1   | N         | 4.2E+00 | 4.6E+00                   | mg/m3     | 4.2E-02                      | mg/m3     |               |               |             | 1.2E-01                        | mg/m3     | 3.1E+01       | mg/m3     | 3.8E-03         | 1.0E-01           | mg/m3     | 3.1E+01   | mg/m3     | 3.2E-03         |           |         |           |         |
|                              |                          |                          |                | VOC             | Carbon tetrachloride      | 56-23-5   | N         | 8.7E-02 | 9.7E-02                   | mg/m3     | 8.8E-04                      | mg/m3     | 6.0E-03       | (mg/m3)-1     | 5.3E-06     | 2.5E-03                        | mg/m3     | 1.0E-01       | mg/m3     | 2.5E-02         | 2.1E-03           | mg/m3     | 1.0E-01   | mg/m3     | 2.1E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | Chloroform                | 67-66-3   | N         | 3.0E+00 | 3.4E+00                   | mg/m3     | 3.1E-02                      | mg/m3     | 2.3E-02       | (mg/m3)-1     | 7.1E-04     | 8.6E-02                        | mg/m3     | 9.8E-02       | mg/m3     | 8.7E-01         | 7.3E-02           | mg/m3     | 9.8E-02   | mg/m3     | 7.4E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | cis-1,2-Dichloroethylene  | 156-59-2  | N         | 4.3E-01 | 4.8E-01                   | mg/m3     | 4.4E-03                      | mg/m3     |               |               |             | 1.2E-02                        | mg/m3     |               |           |                 | 1.0E-02           | mg/m3     |           |           |                 |           |         |           |         |
|                              |                          |                          |                | VOC             | Methyl Ethyl Ketone       | 78-93-3   | N         | 1.1E+01 | 1.3E+01                   | mg/m3     | 1.1E-01                      | mg/m3     |               |               |             | 3.2E-01                        | mg/m3     | 5.0E+00       | mg/m3     | 6.4E-02         | 2.7E-01           | mg/m3     | 5.0E+00   | mg/m3     | 5.4E-02         |           |         |           |         |
|                              |                          |                          |                | VOC             | Methyl tert-butyl ether   | 1634-04-4 | N         | 9.4E-02 | 1.0E-01                   | mg/m3     | 9.6E-04                      | mg/m3     | 2.6E-04       | (mg/m3)-1     | 2.5E-07     | 2.7E-03                        | mg/m3     | 3.0E+00       | mg/m3     | 8.9E-04         | 2.3E-03           | mg/m3     | 3.0E+00   | mg/m3     | 7.5E-04         |           |         |           |         |
|                              |                          |                          |                | VOC             | Methylene chloride        | 75-09-2   | Y         | 3.0E+00 | 3.4E+00                   | mg/m3     | 1.6E-01                      | mg/m3     | 1.0E-05       | (mg/m3)-1     | 1.6E-06     | 8.6E-02                        | mg/m3     | 6.0E-01       | mg/m3     | 1.4E-01         | 7.3E-02           | mg/m3     | 6.0E-01   | mg/m3     | 1.2E-01         |           |         |           |         |
|                              |                          |                          |                | VOC             | Tetrachloroethylene       | 127-18-4  | N         | 4.6E-01 | 5.1E-01                   | mg/m3     | 4.6E-03                      | mg/m3     | 2.6E-04       | (mg/m3)-1     | 1.2E-06     | 1.3E-02                        | mg/m3     | 4.0E-02       | mg/m3     | 3.2E-01         | 1.1E-02           | mg/m3     | 4.0E-02   | mg/m3     | 2.7E-01         |           |         |           |         |
| VOC                          | Toluene                  | 108-88-3                 | N              | 1.9E-02         | 2.2E-02                   | mg/m3     | 2.0E-04   | mg/m3   |                           |           |                              | 5.5E-04   | mg/m3         | 5.0E+00       | mg/m3       | 1.1E-04                        | 4.6E-04   | mg/m3         | 5.0E+00   | mg/m3           | 9.3E-05           |           |           |           |                 |           |         |           |         |
| VOC                          | Trichloroethylene        | 79-01-6                  | Y              | 2.3E-01         | 2.6E-01                   | mg/m3     | 6.5E-03   | mg/m3   | 4.1E-03                   | (mg/m3)-1 | 2.7E-05                      | 6.6E-03   | mg/m3         | 2.0E-03       | mg/m3       | 3.3E+00                        | 5.6E-03   | mg/m3         | 2.0E-03   | mg/m3           | 2.8E+00           |           |           |           |                 |           |         |           |         |
| VOC                          | Vinyl chloride           | 75-01-4                  | Y              | 7.9E-02         | 8.8E-02                   | mg/m3     | See note  | mg/m3   | See note                  | (mg/m3)-1 | 4.3E-06                      | 2.3E-03   | mg/m3         | 1.0E-01       | mg/m3       | 2.3E-02                        | 1.9E-03   | mg/m3         | 1.0E-01   | mg/m3           |                   | 1.9E-02   |           |           |                 |           |         |           |         |
| Water Vapor Inhalation Total |                          |                          |                |                 |                           |           |           |         |                           |           | 7.5E-04                      |           |               |               |             |                                | 8.7E+00   |               |           |                 |                   |           | 7.3E+00   |           |                 |           |         |           |         |
| Groundwater Total            |                          |                          |                |                 |                           |           |           |         |                           |           | 4.2E-03                      |           |               |               |             |                                | 1.3E+01   |               |           |                 |                   |           | 1.4E+01   |           |                 |           |         |           |         |
| Receptor Total               |                          |                          |                |                 |                           |           |           |         |                           |           | 4.2E-03                      |           |               |               |             |                                | 1.3E+01   |               |           |                 |                   |           | 1.4E+01   |           |                 |           |         |           |         |

TABLE 7.5 - INTERMEDIATE AQUIFER  
RESIDENT SENSITIVITY: CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium         | Exposure Medium          | Exposure Point           | Exposure Route               | COPC Group               | COPC                      | CASRN      | Mutagenic | EPC                       |         |       | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |               |         |           |                 |                   |           |         |           |                 |         |
|----------------|--------------------------|--------------------------|------------------------------|--------------------------|---------------------------|------------|-----------|---------------------------|---------|-------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|---------------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|---------|
|                |                          |                          |                              |                          |                           |            |           | Adult                     | Child   | Units | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |               |         |           |                 | Child (0-6 years) |           |         |           |                 |         |
|                |                          |                          |                              |                          |                           |            |           |                           |         |       | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |               | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |         |
|                |                          |                          |                              |                          |                           |            |           |                           |         |       | Value                        | Units     | Value         | Units         |             | Value                          | Units         | Value   | Units     |                 | Value             | Units     | Value   | Units     |                 |         |
| Groundwater    | Groundwater              | Tapwater                 | Ingestion                    | VOC                      | 1,1,2,2-Tetrachloroethane | 79-34-5    | N         | 2.1E-01                   | 2.1E-01 | ug/L  | 3.2E-06                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 6.4E-07     | 6.2E-06                        | mg/kg-day     | 2.0E-02 | mg/kg-day | 3.1E-04         | 1.0E-05           | mg/kg-day | 2.0E-02 | mg/kg-day | 5.2E-04         |         |
|                |                          |                          |                              | VOC                      | Carbon tetrachloride      | 56-23-5    | N         | 3.9E-01                   | 3.9E-01 | ug/L  | 6.0E-06                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 4.2E-07     | 1.2E-05                        | mg/kg-day     | 4.0E-03 | mg/kg-day | 2.9E-03         | 1.9E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 4.8E-03         |         |
|                |                          |                          |                              | VOC                      | Chloroform                | 67-66-3    | N         | 2.1E+00                   | 2.1E+00 | ug/L  | 3.2E-05                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 9.9E-07     | 6.2E-05                        | mg/kg-day     | 1.0E-02 | mg/kg-day | 6.2E-03         | 1.0E-04           | mg/kg-day | 1.0E-02 | mg/kg-day | 1.0E-02         |         |
|                |                          |                          |                              | VOC                      | cis-1,2-Dichloroethylene  | 156-59-2   | N         | 3.5E+00                   | 3.5E+00 | ug/L  | 5.4E-05                      | mg/kg-day |               |               |             | 1.1E-04                        | mg/kg-day     | 2.0E-03 | mg/kg-day | 5.3E-02         | 1.8E-04           | mg/kg-day | 2.0E-03 | mg/kg-day | 8.8E-02         |         |
|                |                          |                          |                              | VOC                      | Methyl Ethyl Ketone       | 78-93-3    | N         | 1.1E+02                   | 1.1E+02 | ug/L  | 1.7E-03                      | mg/kg-day |               |               |             | 3.3E-03                        | mg/kg-day     | 6.0E-01 | mg/kg-day | 5.4E-03         | 5.4E-03           | mg/kg-day | 6.0E-01 | mg/kg-day | 9.0E-03         |         |
|                |                          |                          |                              | VOC                      | Tetrachloroethylene       | 127-18-4   | N         | 2.1E+01                   | 2.1E+01 | ug/L  | 3.2E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 6.8E-07     | 6.3E-04                        | mg/kg-day     | 6.0E-03 | mg/kg-day | 1.0E-01         | 1.0E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 1.7E-01         |         |
|                |                          |                          |                              | VOC                      | Trichloroethylene         | 79-01-6    | Y         | 9.1E+00                   | 9.1E+00 | ug/L  | 2.2E-04                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 1.0E-05     | 2.7E-04                        | mg/kg-day     | 5.0E-04 | mg/kg-day | 5.4E-01         | 4.5E-04           | mg/kg-day | 5.0E-04 | mg/kg-day | 9.1E-01         |         |
|                |                          |                          |                              | VOC                      | Vinyl chloride            | 75-01-4    | Y         | 5.3E-01                   | 5.3E-01 | ug/L  | 3.6E-05                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 2.6E-05     | 1.6E-05                        | mg/kg-day     | 3.0E-03 | mg/kg-day | 5.3E-03         | 2.7E-05           | mg/kg-day | 3.0E-03 | mg/kg-day | 8.9E-03         |         |
|                |                          |                          |                              | Ingestion Total          |                           |            |           |                           |         |       |                              |           |               |               |             | 3.9E-05                        |               |         |           |                 |                   |           |         |           |                 |         |
|                |                          |                          | Groundwater                  | Groundwater              | Tapwater                  | Dermal     | VOC       | 1,1,2,2-Tetrachloroethane | 79-34-5 | N     | 2.1E-01                      | 2.1E-01   | ug/L          | 3.4E-07       | mg/kg-day   | 2.0E-01                        | (mg/kg-day)-1 | 6.9E-08 | 7.6E-07   | mg/kg-day       | 2.0E-02           | mg/kg-day | 3.8E-05 | 1.1E-06   | mg/kg-day       | 2.0E-02 |
| VOC            | Carbon tetrachloride     | 56-23-5                  |                              |                          |                           |            | N         | 3.9E-01                   | 3.9E-01 | ug/L  | 1.4E-06                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 9.6E-08     | 3.0E-06                        | mg/kg-day     | 4.0E-03 | mg/kg-day | 7.6E-04         | 4.6E-06           | mg/kg-day | 4.0E-03 | mg/kg-day | 1.1E-03         |         |
| VOC            | Chloroform               | 67-66-3                  |                              |                          |                           |            | N         | 2.1E+00                   | 2.1E+00 | ug/L  | 2.5E-06                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 7.7E-08     | 5.4E-06                        | mg/kg-day     | 1.0E-02 | mg/kg-day | 5.4E-04         | 8.2E-06           | mg/kg-day | 1.0E-02 | mg/kg-day | 8.2E-04         |         |
| VOC            | cis-1,2-Dichloroethylene | 156-59-2                 |                              |                          |                           |            | N         | 3.5E+00                   | 3.5E+00 | ug/L  | 5.9E-06                      | mg/kg-day |               |               |             | 1.3E-05                        | mg/kg-day     | 2.0E-03 | mg/kg-day | 6.5E-03         | 1.9E-05           | mg/kg-day | 2.0E-03 | mg/kg-day | 9.7E-03         |         |
| VOC            | Methyl Ethyl Ketone      | 78-93-3                  |                              |                          |                           |            | N         | 1.1E+02                   | 1.1E+02 | ug/L  | 1.4E-05                      | mg/kg-day |               |               |             | 3.1E-05                        | mg/kg-day     | 6.0E-01 | mg/kg-day | 5.1E-05         | 4.5E-05           | mg/kg-day | 6.0E-01 | mg/kg-day | 7.4E-05         |         |
| VOC            | Tetrachloroethylene      | 127-18-4                 |                              |                          |                           |            | N         | 2.1E+01                   | 2.1E+01 | ug/L  | 1.6E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 3.5E-07     | 3.6E-04                        | mg/kg-day     | 6.0E-03 | mg/kg-day | 6.0E-02         | 5.5E-04           | mg/kg-day | 6.0E-03 | mg/kg-day | 9.1E-02         |         |
| VOC            | Trichloroethylene        | 79-01-6                  |                              |                          |                           |            | Y         | 9.1E+00                   | 9.1E+00 | ug/L  | 2.9E-05                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 1.3E-06     | 4.4E-05                        | mg/kg-day     | 5.0E-04 | mg/kg-day | 8.7E-02         | 6.6E-05           | mg/kg-day | 5.0E-04 | mg/kg-day | 1.3E-01         |         |
| VOC            | Vinyl chloride           | 75-01-4                  |                              |                          |                           |            | Y         | 5.3E-01                   | 5.3E-01 | ug/L  | 2.4E-06                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 1.7E-06     | 1.2E-06                        | mg/kg-day     | 3.0E-03 | mg/kg-day | 4.1E-04         | 1.8E-06           | mg/kg-day | 3.0E-03 | mg/kg-day | 6.0E-04         |         |
| Dermal Total   |                          |                          |                              |                          |                           |            |           |                           |         |       |                              | 3.7E-06   |               |               |             |                                |               |         |           |                 |                   |           | 2.4E-01 |           |                 |         |
| Groundwater    | Groundwater              | Water Vapors in Bathroom |                              |                          |                           | Inhalation | VOC       | 1,1,2,2-Tetrachloroethane | 79-34-5 | N     | 3.6E-03                      | 4.0E-03   | mg/m3         | 3.6E-05       | mg/m3       | 5.8E-02                        | (mg/m3)-1     | 2.1E-06 | 1.0E-04   | mg/m3           |                   | mg/m3     | 1.9E-03 | 8.6E-05   | mg/m3           | 1.0E-01 |
|                |                          |                          | VOC                          | Carbon tetrachloride     | 56-23-5                   |            | N         | 6.6E-03                   | 7.4E-03 | mg/m3 | 6.8E-05                      | mg/m3     | 6.0E-03       | (mg/m3)-1     | 4.1E-07     | 1.9E-04                        | mg/m3         |         | mg/m3     | 1.6E-04         | 1.6E-04           | mg/m3     |         | mg/m3     |                 |         |
|                |                          |                          | VOC                          | Chloroform               | 67-66-3                   |            | N         | 3.6E-02                   | 4.0E-02 | mg/m3 | 3.6E-04                      | mg/m3     | 2.3E-02       | (mg/m3)-1     | 8.3E-06     | 1.0E-03                        | mg/m3         | 9.8E-02 | mg/m3     | 1.0E-02         | 8.5E-04           | mg/m3     | 9.8E-02 | mg/m3     | 8.7E-03         |         |
|                |                          |                          | VOC                          | cis-1,2-Dichloroethylene | 156-59-2                  |            | N         | 6.1E-02                   | 6.7E-02 | mg/m3 | 6.2E-04                      | mg/m3     |               |               |             | 1.7E-03                        | mg/m3         |         | mg/m3     | 1.5E-03         | 1.5E-03           | mg/m3     |         | mg/m3     |                 |         |
|                |                          |                          | VOC                          | Methyl Ethyl Ketone      | 78-93-3                   |            | N         | 1.9E+00                   | 2.1E+00 | mg/m3 | 1.9E-02                      | mg/m3     |               |               |             | 5.3E-02                        | mg/m3         | 5.0E+00 | mg/m3     | 1.1E-02         | 4.5E-02           | mg/m3     | 5.0E+00 | mg/m3     | 8.9E-03         |         |
|                |                          |                          | VOC                          | Tetrachloroethylene      | 127-18-4                  |            | N         | 3.6E-01                   | 4.0E-01 | mg/m3 | 3.7E-03                      | mg/m3     | 2.6E-04       | (mg/m3)-1     | 9.5E-07     | 1.0E-02                        | mg/m3         | 4.0E-02 | mg/m3     | 2.5E-01         | 8.6E-03           | mg/m3     | 4.0E-02 | mg/m3     | 2.2E-01         |         |
|                |                          |                          | VOC                          | Trichloroethylene        | 79-01-6                   |            | Y         | 1.6E-01                   | 1.7E-01 | mg/m3 | 4.3E-03                      | mg/m3     | 4.1E-03       | (mg/m3)-1     | 1.8E-05     | 4.4E-03                        | mg/m3         | 2.0E-03 | mg/m3     | 2.2E+00         | 3.7E-03           | mg/m3     | 2.0E-03 | mg/m3     | 1.9E+00         |         |
|                |                          |                          | VOC                          | Vinyl chloride           | 75-01-4                   |            | Y         | 9.2E-03                   | 1.0E-02 | mg/m3 | See note                     | mg/m3     | See note      | (mg/m3)-1     | 4.9E-07     | 2.6E-04                        | mg/m3         | 1.0E-01 | mg/m3     | 2.6E-03         | 2.2E-04           | mg/m3     | 1.0E-01 | mg/m3     | 2.2E-03         |         |
|                |                          |                          | Water Vapor Inhalation Total |                          |                           |            |           |                           |         |       |                              |           |               |               | 3.0E-05     |                                |               |         |           |                 |                   |           |         |           |                 | 2.1E+00 |
|                |                          |                          | Groundwater Total            |                          |                           |            |           |                           |         |       |                              |           |               |               | 7.2E-05     |                                |               |         |           |                 |                   |           |         |           |                 | 3.5E+00 |
| Receptor Total |                          |                          |                              |                          |                           |            |           |                           |         |       |                              | 7.2E-05   |               |               |             |                                |               |         |           |                 |                   |           | 3.5E+00 |           |                 |         |

Notes:  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The age-adjustments for a resident's cancer risk are calculated in Table 4.Supp.1.  
The exposure intakes for MMOA chemicals (e.g., chromium) are adjusted for age are calculated in Tables 4.Supp.2.

Abbreviations:  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR - Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral or dermal reference dose  
UCL -- Upper confidence limit

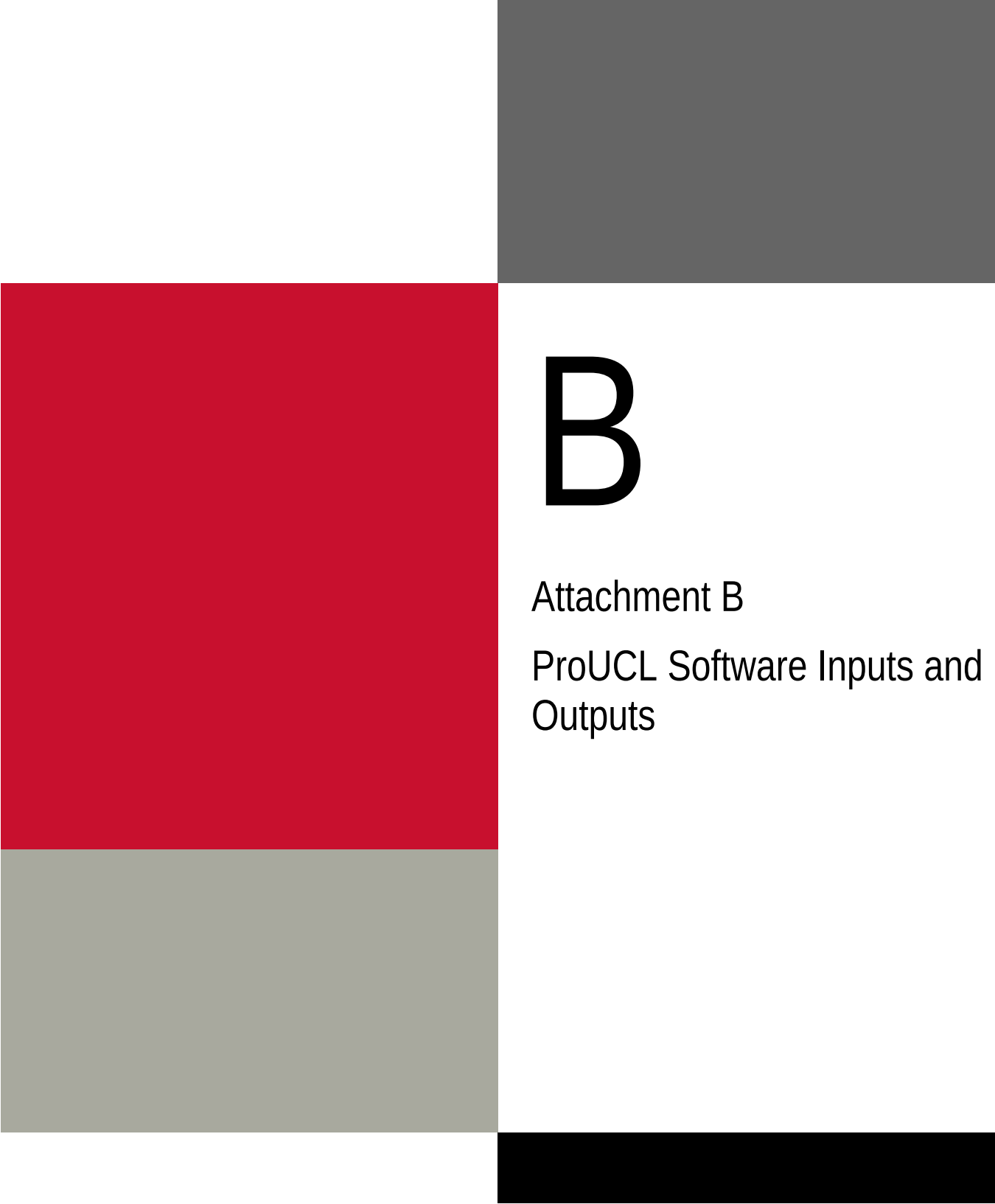
TABLE 7.6 - MEMPHIS AQUIFER  
RESIDENT SENSITIVITY: CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium            | Exposure Medium | Exposure Point           | Exposure Route | COPC Group                   | COPC                 | CASRN    | Mutagenic | EPC     |         |       | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |                   |           |         |           |                 |
|-------------------|-----------------|--------------------------|----------------|------------------------------|----------------------|----------|-----------|---------|---------|-------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|
|                   |                 |                          |                |                              |                      |          |           | Adult   | Child   | Units | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |           |         |           |                 | Child (0-6 years) |           |         |           |                 |
|                   |                 |                          |                |                              |                      |          |           |         |         |       | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |
|                   |                 |                          |                |                              |                      |          |           |         |         |       | Value                        | Units     | Value         | Units         |             | Value                          | Units     | Value   | Units     |                 | Value             | Units     | Value   | Units     |                 |
| Groundwater       | Groundwater     | Tapwater                 | Ingestion      | VOC                          | Carbon tetrachloride | 56-23-5  | N         | 6.8E-01 | 6.8E-01 | ug/L  | 1.1E-05                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 7.4E-07     | 2.0E-05                        | mg/kg-day | 4.0E-03 | mg/kg-day | 5.1E-03         | 3.4E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 8.5E-03         |
|                   |                 |                          |                | VOC                          | Chloroform           | 67-66-3  | N         | 2.1E-01 | 2.1E-01 | ug/L  | 3.2E-06                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 9.8E-08     | 6.2E-06                        | mg/kg-day | 1.0E-02 | mg/kg-day | 6.2E-04         | 1.0E-05           | mg/kg-day | 1.0E-02 | mg/kg-day | 1.0E-03         |
|                   |                 |                          |                | VOC                          | Tetrachloroethylene  | 127-18-4 | N         | 3.7E+00 | 3.7E+00 | ug/L  | 5.7E-05                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 1.2E-07     | 1.1E-04                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.8E-02         | 1.8E-04           | mg/kg-day | 6.0E-03 | mg/kg-day | 3.1E-02         |
|                   |                 |                          |                | VOC                          | Trichloroethylene    | 79-01-6  | Y         | 2.0E+00 | 2.0E+00 | ug/L  | 4.8E-05                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 2.2E-06     | 6.1E-05                        | mg/kg-day | 5.0E-04 | mg/kg-day | 1.2E-01         | 1.0E-04           | mg/kg-day | 5.0E-04 | mg/kg-day | 2.0E-01         |
|                   |                 |                          |                | Ingestion Total              |                      |          |           |         |         |       |                              |           |               |               | 3.2E-06     |                                |           |         |           |                 | 1.5E-01           |           |         |           |                 |
| Groundwater       | Groundwater     | Tapwater                 | Dermal         | VOC                          | Carbon tetrachloride | 56-23-5  | N         | 6.8E-01 | 6.8E-01 | ug/L  | 2.4E-06                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 1.7E-07     | 5.3E-06                        | mg/kg-day | 4.0E-03 | mg/kg-day | 1.3E-03         | 8.0E-06           | mg/kg-day | 4.0E-03 | mg/kg-day | 2.0E-03         |
|                   |                 |                          |                | VOC                          | Chloroform           | 67-66-3  | N         | 2.1E-01 | 2.1E-01 | ug/L  | 2.5E-07                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 7.6E-09     | 5.4E-07                        | mg/kg-day | 1.0E-02 | mg/kg-day | 5.4E-05         | 8.1E-07           | mg/kg-day | 1.0E-02 | mg/kg-day | 8.1E-05         |
|                   |                 |                          |                | VOC                          | Tetrachloroethylene  | 127-18-4 | N         | 3.7E+00 | 3.7E+00 | ug/L  | 2.9E-05                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 6.1E-08     | 6.4E-05                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.1E-02         | 9.7E-05           | mg/kg-day | 6.0E-03 | mg/kg-day | 1.6E-02         |
|                   |                 |                          |                | VOC                          | Trichloroethylene    | 79-01-6  | Y         | 2.0E+00 | 2.0E+00 | ug/L  | 6.4E-06                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 2.9E-07     | 9.7E-06                        | mg/kg-day | 5.0E-04 | mg/kg-day | 1.9E-02         | 1.5E-05           | mg/kg-day | 5.0E-04 | mg/kg-day | 2.9E-02         |
|                   |                 |                          |                | Dermal Total                 |                      |          |           |         |         |       |                              |           |               |               | 5.3E-07     |                                |           |         |           |                 | 3.2E-02           |           |         |           |                 |
| Groundwater       | Groundwater     | Water Vapors in Bathroom | Inhalation     | VOC                          | Carbon tetrachloride | 56-23-5  | N         | 1.2E-02 | 1.3E-02 | mg/m3 | 1.2E-04                      | mg/m3     | 6.0E-03       | (mg/m3)-1     | 7.1E-07     | 3.3E-04                        | mg/m3     | 1.0E-01 | mg/m3     | 3.3E-03         | 2.8E-04           | mg/m3     | 1.0E-01 | mg/m3     | 2.8E-03         |
|                   |                 |                          |                | VOC                          | Chloroform           | 67-66-3  | N         | 3.5E-03 | 3.9E-03 | mg/m3 | 3.6E-05                      | mg/m3     | 2.3E-02       | (mg/m3)-1     | 8.3E-07     | 1.0E-04                        | mg/m3     | 9.8E-02 | mg/m3     | 1.0E-03         | 8.5E-05           | mg/m3     | 9.8E-02 | mg/m3     | 8.7E-04         |
|                   |                 |                          |                | VOC                          | Tetrachloroethylene  | 127-18-4 | N         | 6.4E-02 | 7.1E-02 | mg/m3 | 6.5E-04                      | mg/m3     | 2.6E-04       | (mg/m3)-1     | 1.7E-07     | 1.8E-03                        | mg/m3     | 4.0E-02 | mg/m3     | 4.5E-02         | 1.5E-03           | mg/m3     | 4.0E-02 | mg/m3     | 3.8E-02         |
|                   |                 |                          |                | VOC                          | Trichloroethylene    | 79-01-6  | Y         | 3.5E-02 | 3.9E-02 | mg/m3 | 9.7E-04                      | mg/m3     | 4.1E-03       | (mg/m3)-1     | 4.0E-06     | 9.8E-04                        | mg/m3     | 2.0E-03 | mg/m3     | 4.9E-01         | 8.3E-04           | mg/m3     | 2.0E-03 | mg/m3     | 4.2E-01         |
|                   |                 |                          |                | Water Vapor Inhalation Total |                      |          |           |         |         |       |                              |           |               |               | 5.7E-06     |                                |           |         |           |                 | 5.4E-01           |           |         |           |                 |
| Groundwater Total |                 |                          |                |                              |                      |          |           |         |         |       | 9.4E-06                      |           |               |               |             |                                | 7.2E-01   |         |           |                 |                   |           | 7.5E-01 |           |                 |
| Receptor Total    |                 |                          |                |                              |                      |          |           |         |         |       | 9.4E-06                      |           |               |               |             |                                | 7.2E-01   |         |           |                 |                   |           | 7.5E-01 |           |                 |

Notes:  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.  
The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.  
The single-chemical cancer risks incorporate the one hit equation if cancer risks are > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF). For the risks presented here, the one-hit equation is not needed.  
The age-adjustments for a resident's cancer risk are calculated in Table 4.Supp.1.  
The exposure intakes for MMOA chemicals (e.g., chromium) are adjusted for age are calculated in Tables 4.Supp.2.

Abbreviations:  
COPC -- Constituent of potential concern  
CSF -- Oral cancer slope factor  
EPC -- Exposure point concentration  
IUR - Inhalation unit risk  
RfC -- Inhalation reference concentration  
RfD -- Oral or dermal reference dose  
UCL -- Upper confidence limit



# B

Attachment B

ProUCL Software Inputs and  
Outputs

**ATTACHMENT B TABLE OF CONTENTS:**

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| <b>Table B.1</b> | <b>ProUCL Output for Groundwater – Fluvial Aquifer</b>      |
| <b>Table B.2</b> | <b>ProUCL Output for Groundwater – Intermediate Aquifer</b> |
| <b>Table B.3</b> | <b>ProUCL Output for Groundwater – Memphis Aquifer</b>      |
| <b>Table B.4</b> | <b>ProUCL Input for Groundwater</b>                         |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| UCL Statistics for Data Sets with Non-Detects |                                 |  |  |
|-----------------------------------------------|---------------------------------|--|--|
| User Selected Options                         |                                 |  |  |
| Date/Time of Computation                      | ProUCL 5.110/23/2017 3:10:57 PM |  |  |
| From File                                     | WorkSheet.xls                   |  |  |
| Full Precision                                | OFF                             |  |  |
| Confidence Coefficient                        | 95%                             |  |  |
| Number of Bootstrap Operations                | 2000                            |  |  |

result (fluvial\_1,1,2,2-tetrachloroethane\_79-34-5)

| General Statistics                                                                                                        |           |                                                                 |         |
|---------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------|---------|
| Total Number of Observations                                                                                              | 1137      | Number of Distinct Observations                                 | 67      |
| Number of Detects                                                                                                         | 59        | Number of Non-Detects                                           | 1078    |
| Number of Distinct Detects                                                                                                | 58        | Number of Distinct Non-Detects                                  | 9       |
| Minimum Detect                                                                                                            | 0.207     | Minimum Non-Detect                                              | 0.2     |
| Maximum Detect                                                                                                            | 2.4       | Maximum Non-Detect                                              | 20      |
| Variance Detects                                                                                                          | 0.196     | Percent Non-Detects                                             | 94.81%  |
| Mean Detects                                                                                                              | 0.715     | SD Detects                                                      | 0.443   |
| Median Detects                                                                                                            | 0.656     | CV Detects                                                      | 0.62    |
| Skewness Detects                                                                                                          | 1.759     | Kurtosis Detects                                                | 4.179   |
| Mean of Logged Detects                                                                                                    | -0.501    | SD of Logged Detects                                            | 0.58    |
| Normal GOF Test on Detects Only                                                                                           |           |                                                                 |         |
| Shapiro Wilk Test Statistic                                                                                               | 0.848     | Normal GOF Test on Detected Observations Only                   |         |
| 5% Shapiro Wilk P Value                                                                                                   | 5.8000E-8 | Detected Data Not Normal at 5% Significance Level               |         |
| Lilliefors Test Statistic                                                                                                 | 0.149     | Lilliefors GOF Test                                             |         |
| 5% Lilliefors Critical Value                                                                                              | 0.115     | Detected Data Not Normal at 5% Significance Level               |         |
| Detected Data Not Normal at 5% Significance Level                                                                         |           |                                                                 |         |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |           |                                                                 |         |
| KM Mean                                                                                                                   | 0.234     | KM Standard Error of Mean                                       | 0.00544 |
| KM SD                                                                                                                     | 0.165     | 95% KM (BCA) UCL                                                | 0.243   |
| 95% KM (t) UCL                                                                                                            | 0.243     | 95% KM (Percentile Bootstrap) UCL                               | 0.242   |
| 95% KM (z) UCL                                                                                                            | 0.243     | 95% KM Bootstrap t UCL                                          | 0.244   |
| 90% KM Chebyshev UCL                                                                                                      | 0.25      | 95% KM Chebyshev UCL                                            | 0.257   |
| 97.5% KM Chebyshev UCL                                                                                                    | 0.268     | 99% KM Chebyshev UCL                                            | 0.288   |
| Gamma GOF Tests on Detected Observations Only                                                                             |           |                                                                 |         |
| A-D Test Statistic                                                                                                        | 0.527     | Anderson-Darling GOF Test                                       |         |
| 5% A-D Critical Value                                                                                                     | 0.757     | Detected data appear Gamma Distributed at 5% Significance Level |         |
| K-S Test Statistic                                                                                                        | 0.0732    | Kolmogorov-Smirnov GOF                                          |         |
| 5% K-S Critical Value                                                                                                     | 0.117     | Detected data appear Gamma Distributed at 5% Significance Level |         |
| Detected data appear Gamma Distributed at 5% Significance Level                                                           |           |                                                                 |         |
| Gamma Statistics on Detected Data Only                                                                                    |           |                                                                 |         |
| k hat (MLE)                                                                                                               | 3.192     | k star (bias corrected MLE)                                     | 3.041   |
| Theta hat (MLE)                                                                                                           | 0.224     | Theta star (bias corrected MLE)                                 | 0.235   |
| nu hat (MLE)                                                                                                              | 376.7     | nu star (bias corrected)                                        | 358.8   |
| Mean (detects)                                                                                                            | 0.715     |                                                                 |         |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |           |                                                                 |         |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |           |                                                                 |         |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |           |                                                                 |         |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |           |                                                                 |         |
| This is especially true when the sample size is small.                                                                    |           |                                                                 |         |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |           |                                                                 |         |
| Minimum                                                                                                                   | 0.01      | Mean                                                            | 0.0584  |
| Maximum                                                                                                                   | 2.4       | Median                                                          | 0.01    |
| SD                                                                                                                        | 0.197     | CV                                                              | 3.37    |
| k hat (MLE)                                                                                                               | 0.458     | k star (bias corrected MLE)                                     | 0.458   |
| Theta hat (MLE)                                                                                                           | 0.127     | Theta star (bias corrected MLE)                                 | 0.128   |
| nu hat (MLE)                                                                                                              | 1042      | nu star (bias corrected)                                        | 1041    |
| Adjusted Level of Significance (β)                                                                                        | 0.0498    |                                                                 |         |
| Approximate Chi Square Value (N/A, α)                                                                                     | 967       | Adjusted Chi Square Value (N/A, β)                              | 966.9   |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 0.0629    | 95% Gamma Adjusted UCL (use when n<50)                          | 0.0629  |
| Estimates of Gamma Parameters using KM Estimates                                                                          |           |                                                                 |         |
| Mean (KM)                                                                                                                 | 0.234     | SD (KM)                                                         | 0.165   |
| Variance (KM)                                                                                                             | 0.0273    | SE of Mean (KM)                                                 | 0.00544 |
| k hat (KM)                                                                                                                | 1.996     | k star (KM)                                                     | 1.992   |
| nu hat (KM)                                                                                                               | 4540      | nu star (KM)                                                    | 4529    |
| theta hat (KM)                                                                                                            | 0.117     | theta star (KM)                                                 | 0.117   |
|                                                                                                                           | 0.35      | 90% gamma percentile (KM)                                       | 0.455   |
| 95% gamma percentile (KM)                                                                                                 | 0.555     | 99% gamma percentile (KM)                                       | 0.777   |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |           |                                                                 |         |
| Approximate Chi Square Value (N/A, α)                                                                                     | 4374      | Adjusted Chi Square Value (N/A, β)                              | 4373    |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 0.242     | 95% Gamma Adjusted KM-UCL (use when n<50)                       | 0.242   |
| Lognormal GOF Test on Detected Observations Only                                                                          |           |                                                                 |         |
| Shapiro Wilk Approximate Test Statistic                                                                                   | 0.965     | Shapiro Wilk GOF Test                                           |         |
| 5% Shapiro Wilk P Value                                                                                                   | 0.188     | Detected Data appear Lognormal at 5% Significance Level         |         |
| Lilliefors Test Statistic                                                                                                 | 0.0848    | Lilliefors GOF Test                                             |         |
| 5% Lilliefors Critical Value                                                                                              | 0.115     | Detected Data appear Lognormal at 5% Significance Level         |         |
| Detected Data appear Lognormal at 5% Significance Level                                                                   |           |                                                                 |         |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                        |           |                                                                 |         |
| Mean in Original Scale                                                                                                    | 0.103     | Mean in Log Scale                                               | -3.179  |
| SD in Original Scale                                                                                                      | 0.195     | SD in Log Scale                                                 | 1.353   |



TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|--------|
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 0.112  | 95% Percentile Bootstrap UCL                                 | 0.112  |
| 95% BCA Bootstrap UCL                                                                                                                     | 0.113  | 95% Bootstrap t UCL                                          | 0.113  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A    |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                              |        |
| KM Mean (logged)                                                                                                                          | -1.536 | KM Geo Mean                                                  | 0.215  |
| KM SD (logged)                                                                                                                            | 0.311  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0105 | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            | 0.311  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0105 |                                                              |        |
| DL/2 Statistics                                                                                                                           |        |                                                              |        |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 0.433  | Mean in Log Scale                                            | -1.622 |
| SD in Original Scale                                                                                                                      | 0.804  | SD in Log Scale                                              | 1.078  |
| 95% t UCL (Assumes normality)                                                                                                             | 0.472  | 95% H-Stat UCL                                               | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                              |        |
| Detected Data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                              |        |
| Suggested UCL to Use                                                                                                                      |        |                                                              |        |
| 95% KM Approximate Gamma UCL                                                                                                              | 0.242  | 95% GROS Approximate Gamma UCL                               | 0.0629 |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                              |        |
| result (fluvial_1,1-dichloroethene_75-35-4)                                                                                               |        |                                                              |        |
| General Statistics                                                                                                                        |        |                                                              |        |
| Total Number of Observations                                                                                                              | 1137   | Number of Distinct Observations                              | 85     |
| Number of Detects                                                                                                                         | 88     | Number of Non-Detects                                        | 1049   |
| Number of Distinct Detects                                                                                                                | 77     | Number of Distinct Non-Detects                               | 9      |
| Minimum Detect                                                                                                                            | 0.504  | Minimum Non-Detect                                           | 0.5    |
| Maximum Detect                                                                                                                            | 13.6   | Maximum Non-Detect                                           | 50     |
| Variance Detects                                                                                                                          | 6.43   | Percent Non-Detects                                          | 92.26% |
| Mean Detects                                                                                                                              | 1.944  | SD Detects                                                   | 2.536  |
| Median Detects                                                                                                                            | 1.14   | CV Detects                                                   | 1.305  |
| Skewness Detects                                                                                                                          | 3.535  | Kurtosis Detects                                             | 12.25  |
| Mean of Logged Detects                                                                                                                    | 0.306  | SD of Logged Detects                                         | 0.72   |
| Normal GOF Test on Detects Only                                                                                                           |        |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.495  | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.326  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0946 | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |                                                              |        |
| KM Mean                                                                                                                                   | 0.632  | KM Standard Error of Mean                                    | 0.0254 |
| KM SD                                                                                                                                     | 0.823  | 95% KM (BCA) UCL                                             | 0.673  |
| 95% KM (t) UCL                                                                                                                            | 0.674  | 95% KM (Percentile Bootstrap) UCL                            | 0.675  |
| 95% KM (z) UCL                                                                                                                            | 0.674  | 95% KM Bootstrap t UCL                                       | 0.687  |
| 90% KM Chebyshev UCL                                                                                                                      | 0.709  | 95% KM Chebyshev UCL                                         | 0.743  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 0.791  | 99% KM Chebyshev UCL                                         | 0.885  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |                                                              |        |
| A-D Test Statistic                                                                                                                        | 6.609  | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.771  | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.195  | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.097  | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |        |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                              |        |
| k hat (MLE)                                                                                                                               | 1.54   | k star (bias corrected MLE)                                  | 1.495  |
| Theta hat (MLE)                                                                                                                           | 1.262  | Theta star (bias corrected MLE)                              | 1.3    |
| nu hat (MLE)                                                                                                                              | 271    | nu star (bias corrected)                                     | 263.1  |
| Mean (detects)                                                                                                                            | 1.944  |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |        |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                              |        |
| Minimum                                                                                                                                   | 0.01   | Mean                                                         | 0.186  |
| Maximum                                                                                                                                   | 13.6   | Median                                                       | 0.01   |
| SD                                                                                                                                        | 0.901  | CV                                                           | 4.849  |
| k hat (MLE)                                                                                                                               | 0.283  | k star (bias corrected MLE)                                  | 0.283  |
| Theta hat (MLE)                                                                                                                           | 0.656  | Theta star (bias corrected MLE)                              | 0.657  |
| nu hat (MLE)                                                                                                                              | 643.6  | nu star (bias corrected)                                     | 643.2  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498 |                                                              |        |
| Approximate Chi Square Value (643.21, α)                                                                                                  | 585.4  | Adjusted Chi Square Value (643.21, β)                        | 585.3  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.204  | 95% Gamma Adjusted UCL (use when n<50)                       | 0.204  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |                                                              |        |
| Mean (KM)                                                                                                                                 | 0.632  | SD (KM)                                                      | 0.823  |
| Variance (KM)                                                                                                                             | 0.677  | SE of Mean (KM)                                              | 0.0254 |
| k hat (KM)                                                                                                                                | 0.591  | k star (KM)                                                  | 0.59   |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |           |                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------|--------|
| nu hat (KM)                                                                                                                               | 1343      | nu star (KM)                                                    | 1341   |
| theta hat (KM)                                                                                                                            | 1.07      | theta star (KM)                                                 | 1.072  |
| 80% gamma percentile (KM)                                                                                                                 | 1.042     | 90% gamma percentile (KM)                                       | 1.651  |
| 95% gamma percentile (KM)                                                                                                                 | 2.29      | 99% gamma percentile (KM)                                       | 3.837  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                                 |        |
| Approximate Chi Square Value (N/A, $\alpha$ )                                                                                             | 1257      | Adjusted Chi Square Value (N/A, $\beta$ )                       | 1257   |
| 95% Gamma Approximate KM-UCL (use when $n \geq 50$ )                                                                                      | 0.675     | 95% Gamma Adjusted KM-UCL (use when $n < 50$ )                  | 0.675  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                                 |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.87      | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.295E-10 | Detected Data Not Lognormal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.15      | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0946    | Detected Data Not Lognormal at 5% Significance Level            |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                                 |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                                 |        |
| Mean in Original Scale                                                                                                                    | 0.279     | Mean in Log Scale                                               | -2.597 |
| SD in Original Scale                                                                                                                      | 0.879     | SD in Log Scale                                                 | 1.618  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 0.321     | 95% Percentile Bootstrap UCL                                    | 0.325  |
| 95% BCA Bootstrap UCL                                                                                                                     | 0.339     | 95% Bootstrap t UCL                                             | 0.334  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A       |                                                                 |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                                 |        |
| KM Mean (logged)                                                                                                                          | -0.595    | KM Geo Mean                                                     | 0.551  |
| KM SD (logged)                                                                                                                            | 0.362     | 95% Critical H Value (KM-Log)                                   | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0119    | 95% H-UCL (KM -Log)                                             | N/A    |
| KM SD (logged)                                                                                                                            | 0.362     | 95% Critical H Value (KM-Log)                                   | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0119    |                                                                 |        |
| DL/2 Statistics                                                                                                                           |           |                                                                 |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                            |        |
| Mean in Original Scale                                                                                                                    | 1.131     | Mean in Log Scale                                               | -0.673 |
| SD in Original Scale                                                                                                                      | 2.118     | SD in Log Scale                                                 | 1.089  |
| 95% t UCL (Assumes normality)                                                                                                             | 1.234     | 95% H-Stat UCL                                                  | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                                 |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                                 |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                                 |        |
| Suggested UCL to Use                                                                                                                      |           |                                                                 |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 0.743     |                                                                 |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                                 |        |
| result (fluvial_1,2,3-trichloropropane_96-18-4)                                                                                           |           |                                                                 |        |
| General Statistics                                                                                                                        |           |                                                                 |        |
| Total Number of Observations                                                                                                              | 1137      | Number of Distinct Observations                                 | 61     |
| Number of Detects                                                                                                                         | 54        | Number of Non-Detects                                           | 1083   |
| Number of Distinct Detects                                                                                                                | 52        | Number of Distinct Non-Detects                                  | 9      |
| Minimum Detect                                                                                                                            | 0.694     | Minimum Non-Detect                                              | 0.5    |
| Maximum Detect                                                                                                                            | 83.3      | Maximum Non-Detect                                              | 50     |
| Variance Detects                                                                                                                          | 371.9     | Percent Non-Detects                                             | 95.25% |
| Mean Detects                                                                                                                              | 17.31     | SD Detects                                                      | 19.28  |
| Median Detects                                                                                                                            | 10.5      | CV Detects                                                      | 1.114  |
| Skewness Detects                                                                                                                          | 1.619     | Kurtosis Detects                                                | 1.949  |
| Mean of Logged Detects                                                                                                                    | 2.219     | SD of Logged Detects                                            | 1.23   |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.771     | Normal GOF Test on Detected Observations Only                   |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 8.480E-11 | Detected Data Not Normal at 5% Significance Level               |        |
| Lilliefors Test Statistic                                                                                                                 | 0.264     | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.12      | Detected Data Not Normal at 5% Significance Level               |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |           |                                                                 |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |           |                                                                 |        |
| KM Mean                                                                                                                                   | 1.312     | KM Standard Error of Mean                                       | 0.165  |
| KM SD                                                                                                                                     | 5.495     | 95% KM (BCA) UCL                                                | 1.594  |
| 95% KM (t) UCL                                                                                                                            | 1.583     | 95% KM (Percentile Bootstrap) UCL                               | 1.608  |
| 95% KM (z) UCL                                                                                                                            | 1.583     | 95% KM Bootstrap t UCL                                          | 1.647  |
| 90% KM Chebyshev UCL                                                                                                                      | 1.806     | 95% KM Chebyshev UCL                                            | 2.03   |
| 97.5% KM Chebyshev UCL                                                                                                                    | 2.341     | 99% KM Chebyshev UCL                                            | 2.952  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |           |                                                                 |        |
| A-D Test Statistic                                                                                                                        | 0.779     | Anderson-Darling GOF Test                                       |        |
| 5% A-D Critical Value                                                                                                                     | 0.784     | Detected data appear Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.127     | Kolmogorov-Srsmiov GOF                                          |        |
| 5% K-S Critical Value                                                                                                                     | 0.125     | Detected Data Not Gamma Distributed at 5% Significance Level    |        |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                    |           |                                                                 |        |
| Gamma Statistics on Detected Data Only                                                                                                    |           |                                                                 |        |
| k hat (MLE)                                                                                                                               | 0.922     | k star (bias corrected MLE)                                     | 0.884  |
| Theta hat (MLE)                                                                                                                           | 18.76     | Theta star (bias corrected MLE)                                 | 19.59  |
| nu hat (MLE)                                                                                                                              | 99.62     | nu star (bias corrected)                                        | 95.42  |
| Mean (detects)                                                                                                                            | 17.31     |                                                                 |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |           |                                                                 |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                         |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------|--------|
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                         |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                         |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                         |        |
| This is especially true when the sample size is small.                                                                                    |        |                                                         |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                         |        |
| Minimum                                                                                                                                   | 0.01   | Mean                                                    | 0.832  |
| Maximum                                                                                                                                   | 83.3   | Median                                                  | 0.01   |
| SD                                                                                                                                        | 5.559  | CV                                                      | 6.683  |
| k hat (MLE)                                                                                                                               | 0.182  | k star (bias corrected MLE)                             | 0.182  |
| Theta hat (MLE)                                                                                                                           | 4.562  | Theta star (bias corrected MLE)                         | 4.559  |
| nu hat (MLE)                                                                                                                              | 414.6  | nu star (bias corrected)                                | 414.9  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498 |                                                         |        |
| Approximate Chi Square Value (414.88, α)                                                                                                  | 368.7  | Adjusted Chi Square Value (414.88, β)                   | 368.6  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.936  | 95% Gamma Adjusted UCL (use when n<50)                  | 0.936  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |                                                         |        |
| Mean (KM)                                                                                                                                 | 1.312  | SD (KM)                                                 | 5.495  |
| Variance (KM)                                                                                                                             | 30.2   | SE of Mean (KM)                                         | 0.165  |
| k hat (KM)                                                                                                                                | 0.057  | k star (KM)                                             | 0.0574 |
| nu hat (KM)                                                                                                                               | 129.6  | nu star (KM)                                            | 130.6  |
| theta hat (KM)                                                                                                                            | 23.02  | theta star (KM)                                         | 22.84  |
| 80% gamma percentile (KM)                                                                                                                 | 0.279  | 90% gamma percentile (KM)                               | 2.359  |
| 95% gamma percentile (KM)                                                                                                                 | 7.278  | 99% gamma percentile (KM)                               | 26.96  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |                                                         |        |
| Approximate Chi Square Value (130.61, α)                                                                                                  | 105.2  | Adjusted Chi Square Value (130.61, β)                   | 105.2  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 1.629  | 95% Gamma Adjusted KM-UCL (use when n<50)               | 1.629  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                         |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.955  | Shapiro Wilk GOF Test                                   |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0.0797 | Detected Data appear Lognormal at 5% Significance Level |        |
| Lilliefors Test Statistic                                                                                                                 | 0.084  | Lilliefors GOF Test                                     |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.12   | Detected Data appear Lognormal at 5% Significance Level |        |
| Detected Data appear Lognormal at 5% Significance Level                                                                                   |        |                                                         |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                         |        |
| Mean in Original Scale                                                                                                                    | 0.954  | Mean in Log Scale                                       | -4.216 |
| SD in Original Scale                                                                                                                      | 5.551  | SD in Log Scale                                         | 3.067  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 1.225  | 95% Percentile Bootstrap UCL                            | 1.237  |
| 95% BCA Bootstrap UCL                                                                                                                     | 1.292  | 95% Bootstrap t UCL                                     | 1.304  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A    |                                                         |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                         |        |
| KM Mean (logged)                                                                                                                          | -0.548 | KM Geo Mean                                             | 0.578  |
| KM SD (logged)                                                                                                                            | 0.683  | 95% Critical H Value (KM-Log)                           | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0208 | 95% H-UCL (KM -Log)                                     | N/A    |
| KM SD (logged)                                                                                                                            | 0.683  | 95% Critical H Value (KM-Log)                           | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0208 |                                                         |        |
| DL/2 Statistics                                                                                                                           |        |                                                         |        |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                    |        |
| Mean in Original Scale                                                                                                                    | 1.809  | Mean in Log Scale                                       | -0.634 |
| SD in Original Scale                                                                                                                      | 5.77   | SD in Log Scale                                         | 1.246  |
| 95% t UCL (Assumes normality)                                                                                                             | 2.09   | 95% H-Stat UCL                                          | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                         |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                         |        |
| Detected Data appear Approximate Gamma Distributed at 5% Significance Level                                                               |        |                                                         |        |
| Suggested UCL to Use                                                                                                                      |        |                                                         |        |
| 95% KM Approximate Gamma UCL                                                                                                              | 1.629  |                                                         |        |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |        |                                                         |        |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |        |                                                         |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                         |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                         |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                         |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                         |        |
| result (fluvial_1,2,4-trimethylbenzene_95-63-6)                                                                                           |        |                                                         |        |
| General Statistics                                                                                                                        |        |                                                         |        |
| Total Number of Observations                                                                                                              | 1137   | Number of Distinct Observations                         | 129    |
| Number of Detects                                                                                                                         | 122    | Number of Non-Detects                                   | 1015   |
| Number of Distinct Detects                                                                                                                | 122    | Number of Distinct Non-Detects                          | 10     |
| Minimum Detect                                                                                                                            | 0.253  | Minimum Non-Detect                                      | 0.25   |
| Maximum Detect                                                                                                                            | 142    | Maximum Non-Detect                                      | 25     |
| Variance Detects                                                                                                                          | 249.3  | Percent Non-Detects                                     | 89.27% |
| Mean Detects                                                                                                                              | 6.97   | SD Detects                                              | 15.79  |
| Median Detects                                                                                                                            | 2.685  | CV Detects                                              | 2.266  |
| Skewness Detects                                                                                                                          | 6.097  | Kurtosis Detects                                        | 46.29  |
| Mean of Logged Detects                                                                                                                    | 0.968  | SD of Logged Detects                                    | 1.321  |
| Normal GOF Test on Detects Only                                                                                                           |        |                                                         |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.428  | Normal GOF Test on Detected Observations Only           |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level       |        |
| Lilliefors Test Statistic                                                                                                                 | 0.335  | Lilliefors GOF Test                                     |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0806 | Detected Data Not Normal at 5% Significance Level       |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |                                                         |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|--------|
| KM Mean                                                                                                                                   | 0.986  | KM Standard Error of Mean                                    | 0.166  |
| KM SD                                                                                                                                     | 5.557  | 95% KM (BCA) UCL                                             | 1.281  |
| 95% KM (t) UCL                                                                                                                            | 1.258  | 95% KM (Percentile Bootstrap) UCL                            | 1.273  |
| 95% KM (z) UCL                                                                                                                            | 1.258  | 95% KM Bootstrap t UCL                                       | 1.454  |
| 90% KM Chebyshev UCL                                                                                                                      | 1.483  | 95% KM Chebyshev UCL                                         | 1.708  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 2.02   | 99% KM Chebyshev UCL                                         | 2.633  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |                                                              |        |
| A-D Test Statistic                                                                                                                        | 4.554  | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.807  | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.15   | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.0878 | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |        |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                              |        |
| k hat (MLE)                                                                                                                               | 0.63   | k star (bias corrected MLE)                                  | 0.62   |
| Theta hat (MLE)                                                                                                                           | 11.06  | Theta star (bias corrected MLE)                              | 11.24  |
| nu hat (MLE)                                                                                                                              | 153.7  | nu star (bias corrected)                                     | 151.3  |
| Mean (detects)                                                                                                                            | 6.97   |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |        |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                              |        |
| Minimum                                                                                                                                   | 0.01   | Mean                                                         | 0.758  |
| Maximum                                                                                                                                   | 142    | Median                                                       | 0.01   |
| SD                                                                                                                                        | 5.586  | CV                                                           | 7.365  |
| k hat (MLE)                                                                                                                               | 0.198  | k star (bias corrected MLE)                                  | 0.198  |
| Theta hat (MLE)                                                                                                                           | 3.831  | Theta star (bias corrected MLE)                              | 3.83   |
| nu hat (MLE)                                                                                                                              | 450.2  | nu star (bias corrected)                                     | 450.3  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498 |                                                              |        |
| Approximate Chi Square Value (450.35, α)                                                                                                  | 402.1  | Adjusted Chi Square Value (450.35, β)                        | 402.1  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.849  | 95% Gamma Adjusted UCL (use when n<50)                       | 0.849  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |                                                              |        |
| Mean (KM)                                                                                                                                 | 0.986  | SD (KM)                                                      | 5.557  |
| Variance (KM)                                                                                                                             | 30.88  | SE of Mean (KM)                                              | 0.166  |
| k hat (KM)                                                                                                                                | 0.0315 | k star (KM)                                                  | 0.032  |
| nu hat (KM)                                                                                                                               | 71.54  | nu star (KM)                                                 | 72.69  |
| theta hat (KM)                                                                                                                            | 31.33  | theta star (KM)                                              | 30.84  |
| 80% gamma percentile (KM)                                                                                                                 | 0.0165 | 90% gamma percentile (KM)                                    | 0.672  |
| 95% gamma percentile (KM)                                                                                                                 | 4.038  | 99% gamma percentile (KM)                                    | 25.01  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |                                                              |        |
| Approximate Chi Square Value (72.69, α)                                                                                                   | 54.06  | Adjusted Chi Square Value (72.69, β)                         | 54.04  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 1.325  | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 1.326  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.969  | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0.0741 | Detected Data appear Lognormal at 5% Significance Level      |        |
| Lilliefors Test Statistic                                                                                                                 | 0.0419 | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0806 | Detected Data appear Lognormal at 5% Significance Level      |        |
| Detected Data appear Lognormal at 5% Significance Level                                                                                   |        |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                              |        |
| Mean in Original Scale                                                                                                                    | 0.806  | Mean in Log Scale                                            | -4.173 |
| SD in Original Scale                                                                                                                      | 5.581  | SD in Log Scale                                              | 2.991  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 1.078  | 95% Percentile Bootstrap UCL                                 | 1.109  |
| 95% BCA Bootstrap UCL                                                                                                                     | 1.205  | 95% Bootstrap t UCL                                          | 1.268  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A    |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                              |        |
| KM Mean (logged)                                                                                                                          | -1.116 | KM Geo Mean                                                  | 0.328  |
| KM SD (logged)                                                                                                                            | 0.86   | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0262 | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            | 0.86   | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0262 |                                                              |        |
| DL/2 Statistics                                                                                                                           |        |                                                              |        |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 1.179  | Mean in Log Scale                                            | -1.287 |
| SD in Original Scale                                                                                                                      | 5.615  | SD in Log Scale                                              | 1.321  |
| 95% t UCL (Assumes normality)                                                                                                             | 1.453  | 95% H-Stat UCL                                               | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                              |        |
| Detected Data appear Lognormal Distributed at 5% Significance Level                                                                       |        |                                                              |        |
| Suggested UCL to Use                                                                                                                      |        |                                                              |        |
| KM H-UCL                                                                                                                                  | N/A    |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                              |        |
| result (fluvial_1,2-dichloroethane_107-06-2)                                                                                              |        |                                                              |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| General Statistics                                                                                                        |           |                                                              |        |
|---------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|--------|
| Total Number of Observations                                                                                              | 1137      | Number of Distinct Observations                              | 91     |
| Number of Detects                                                                                                         | 89        | Number of Non-Detects                                        | 1048   |
| Number of Distinct Detects                                                                                                | 84        | Number of Distinct Non-Detects                               | 9      |
| Minimum Detect                                                                                                            | 0.25      | Minimum Non-Detect                                           | 0.25   |
| Maximum Detect                                                                                                            | 14.7      | Maximum Non-Detect                                           | 25     |
| Variance Detects                                                                                                          | 5.503     | Percent Non-Detects                                          | 92.17% |
| Mean Detects                                                                                                              | 1.408     | SD Detects                                                   | 2.346  |
| Median Detects                                                                                                            | 0.532     | CV Detects                                                   | 1.666  |
| Skewness Detects                                                                                                          | 4.036     | Kurtosis Detects                                             | 17.95  |
| Mean of Logged Detects                                                                                                    | -0.241    | SD of Logged Detects                                         | 0.937  |
| Normal GOF Test on Detects Only                                                                                           |           |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.497     | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                   | 0         | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                 | 0.311     | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.0941    | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                         |           |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |           |                                                              |        |
| KM Mean                                                                                                                   | 0.351     | KM Standard Error of Mean                                    | 0.0221 |
| KM SD                                                                                                                     | 0.731     | 95% KM (BCA) UCL                                             | 0.39   |
| 95% KM (t) UCL                                                                                                            | 0.387     | 95% KM (Percentile Bootstrap) UCL                            | 0.39   |
| 95% KM (z) UCL                                                                                                            | 0.387     | 95% KM Bootstrap t UCL                                       | 0.406  |
| 90% KM Chebyshev UCL                                                                                                      | 0.417     | 95% KM Chebyshev UCL                                         | 0.447  |
| 97.5% KM Chebyshev UCL                                                                                                    | 0.489     | 99% KM Chebyshev UCL                                         | 0.571  |
| Gamma GOF Tests on Detected Observations Only                                                                             |           |                                                              |        |
| A-D Test Statistic                                                                                                        | 6.178     | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                     | 0.783     | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                        | 0.216     | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                     | 0.0976    | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                              |           |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                    |           |                                                              |        |
| k hat (MLE)                                                                                                               | 0.99      | k star (bias corrected MLE)                                  | 0.964  |
| Theta hat (MLE)                                                                                                           | 1.422     | Theta star (bias corrected MLE)                              | 1.46   |
| nu hat (MLE)                                                                                                              | 176.3     | nu star (bias corrected)                                     | 171.7  |
| Mean (detects)                                                                                                            | 1.408     |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |           |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |           |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |           |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |           |                                                              |        |
| This is especially true when the sample size is small.                                                                    |           |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |           |                                                              |        |
| Minimum                                                                                                                   | 0.01      | Mean                                                         | 0.13   |
| Maximum                                                                                                                   | 14.7      | Median                                                       | 0.01   |
| SD                                                                                                                        | 0.762     | CV                                                           | 5.855  |
| k hat (MLE)                                                                                                               | 0.314     | k star (bias corrected MLE)                                  | 0.314  |
| Theta hat (MLE)                                                                                                           | 0.414     | Theta star (bias corrected MLE)                              | 0.414  |
| nu hat (MLE)                                                                                                              | 715.1     | nu star (bias corrected)                                     | 714.5  |
| Adjusted Level of Significance (β)                                                                                        | 0.0498    |                                                              |        |
| Approximate Chi Square Value (714.51, α)                                                                                  | 653.5     | Adjusted Chi Square Value (714.51, β)                        | 653.4  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 0.142     | 95% Gamma Adjusted UCL (use when n<50)                       | 0.142  |
| Estimates of Gamma Parameters using KM Estimates                                                                          |           |                                                              |        |
| Mean (KM)                                                                                                                 | 0.351     | SD (KM)                                                      | 0.731  |
| Variance (KM)                                                                                                             | 0.534     | SE of Mean (KM)                                              | 0.0221 |
| k hat (KM)                                                                                                                | 0.23      | k star (KM)                                                  | 0.23   |
| nu hat (KM)                                                                                                               | 523.7     | nu star (KM)                                                 | 523.6  |
| theta hat (KM)                                                                                                            | 1.523     | theta star (KM)                                              | 1.523  |
| 80% gamma percentile (KM)                                                                                                 | 0.494     | 90% gamma percentile (KM)                                    | 1.058  |
| 95% gamma percentile (KM)                                                                                                 | 1.739     | 99% gamma percentile (KM)                                    | 3.574  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |           |                                                              |        |
| Approximate Chi Square Value (523.63, α)                                                                                  | 471.6     | Adjusted Chi Square Value (523.63, β)                        | 471.5  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 0.39      | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 0.39   |
| Lognormal GOF Test on Detected Observations Only                                                                          |           |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                   | 0.881     | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                   | 1.2568E-9 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                 | 0.18      | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.0941    | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                      |           |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                        |           |                                                              |        |
| Mean in Original Scale                                                                                                    | 0.154     | Mean in Log Scale                                            | -4.101 |
| SD in Original Scale                                                                                                      | 0.755     | SD in Log Scale                                              | 2.128  |
| 95% t UCL (assumes normality of ROS data)                                                                                 | 0.19      | 95% Percentile Bootstrap UCL                                 | 0.193  |
| 95% BCA Bootstrap UCL                                                                                                     | 0.206     | 95% Bootstrap t UCL                                          | 0.204  |
| 95% H-UCL (Log ROS)                                                                                                       | N/A       |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                          |           |                                                              |        |
| KM Mean (logged)                                                                                                          | -1.279    | KM Geo Mean                                                  | 0.278  |
| KM SD (logged)                                                                                                            | 0.427     | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                        | 0.0136    | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                            | 0.427     | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                        | 0.0136    |                                                              |        |
| DL/2 Statistics                                                                                                           |           |                                                              |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| DL/2 Normal                                                                                                                               |       | DL/2 Log-Transformed |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------|--------|
| Mean in Original Scale                                                                                                                    | 0.589 | Mean in Log Scale    | -1.367 |
| SD in Original Scale                                                                                                                      | 1.198 | SD in Log Scale      | 1.105  |
| 95% t UCL (Assumes normality)                                                                                                             | 0.648 | 95% H-Stat UCL       | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |       |                      |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |       |                      |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |       |                      |        |
| Suggested UCL to Use                                                                                                                      |       |                      |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 0.447 |                      |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |       |                      |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |       |                      |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |       |                      |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |       |                      |        |

result (fluvial\_1,2-dichloropropane\_78-87-5)

|                                                                                                                           |        |                                                              |        |
|---------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|--------|
| General Statistics                                                                                                        |        |                                                              |        |
| Total Number of Observations                                                                                              | 1137   | Number of Distinct Observations                              | 100    |
| Number of Detects                                                                                                         | 100    | Number of Non-Detects                                        | 1037   |
| Number of Distinct Detects                                                                                                | 93     | Number of Distinct Non-Detects                               | 9      |
| Minimum Detect                                                                                                            | 0.202  | Minimum Non-Detect                                           | 0.2    |
| Maximum Detect                                                                                                            | 44     | Maximum Non-Detect                                           | 20     |
| Variance Detects                                                                                                          | 27.47  | Percent Non-Detects                                          | 91.2%  |
| Mean Detects                                                                                                              | 1.556  | SD Detects                                                   | 5.241  |
| Median Detects                                                                                                            | 0.478  | CV Detects                                                   | 3.367  |
| Skewness Detects                                                                                                          | 6.661  | Kurtosis Detects                                             | 48.33  |
| Mean of Logged Detects                                                                                                    | -0.515 | SD of Logged Detects                                         | 0.935  |
| Normal GOF Test on Detects Only                                                                                           |        |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.262  | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                 | 0.415  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.0889 | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                         |        |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |        |                                                              |        |
| KM Mean                                                                                                                   | 0.328  | KM Standard Error of Mean                                    | 0.0476 |
| KM SD                                                                                                                     | 1.595  | 95% KM (BCA) UCL                                             | 0.425  |
| 95% KM (t) UCL                                                                                                            | 0.406  | 95% KM (Percentile Bootstrap) UCL                            | 0.412  |
| 95% KM (z) UCL                                                                                                            | 0.406  | 95% KM Bootstrap t UCL                                       | 0.564  |
| 90% KM Chebyshev UCL                                                                                                      | 0.47   | 95% KM Chebyshev UCL                                         | 0.535  |
| 97.5% KM Chebyshev UCL                                                                                                    | 0.625  | 99% KM Chebyshev UCL                                         | 0.801  |
| Gamma GOF Tests on Detected Observations Only                                                                             |        |                                                              |        |
| A-D Test Statistic                                                                                                        | 17.6   | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                     | 0.805  | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                        | 0.316  | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                     | 0.0937 | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                              |        |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                    |        |                                                              |        |
| k hat (MLE)                                                                                                               | 0.639  | k star (bias corrected MLE)                                  | 0.627  |
| Theta hat (MLE)                                                                                                           | 2.434  | Theta star (bias corrected MLE)                              | 2.483  |
| nu hat (MLE)                                                                                                              | 127.9  | nu star (bias corrected)                                     | 125.4  |
| Mean (detects)                                                                                                            | 1.556  |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |        |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |        |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |        |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |        |                                                              |        |
| This is especially true when the sample size is small.                                                                    |        |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |        |                                                              |        |
| Minimum                                                                                                                   | 0.01   | Mean                                                         | 0.163  |
| Maximum                                                                                                                   | 44     | Median                                                       | 0.01   |
| SD                                                                                                                        | 1.621  | CV                                                           | 9.912  |
| k hat (MLE)                                                                                                               | 0.291  | k star (bias corrected MLE)                                  | 0.29   |
| Theta hat (MLE)                                                                                                           | 0.562  | Theta star (bias corrected MLE)                              | 0.563  |
| nu hat (MLE)                                                                                                              | 661    | nu star (bias corrected)                                     | 660.6  |
| Adjusted Level of Significance (β)                                                                                        | 0.0498 |                                                              |        |
| Approximate Chi Square Value (660.59, α)                                                                                  | 602    | Adjusted Chi Square Value (660.59, β)                        | 601.9  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 0.179  | 95% Gamma Adjusted UCL (use when n<50)                       | 0.179  |
| Estimates of Gamma Parameters using KM Estimates                                                                          |        |                                                              |        |
| Mean (KM)                                                                                                                 | 0.328  | SD (KM)                                                      | 1.595  |
| Variance (KM)                                                                                                             | 2.544  | SE of Mean (KM)                                              | 0.0476 |
| k hat (KM)                                                                                                                | 0.0422 | k star (KM)                                                  | 0.0427 |
| nu hat (KM)                                                                                                               | 95.98  | nu star (KM)                                                 | 97.06  |
| theta hat (KM)                                                                                                            | 7.763  | theta star (KM)                                              | 7.677  |
| 80% gamma percentile (KM)                                                                                                 | 0.024  | 90% gamma percentile (KM)                                    | 0.397  |
| 95% gamma percentile (KM)                                                                                                 | 1.628  | 99% gamma percentile (KM)                                    | 7.568  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |        |                                                              |        |
| Approximate Chi Square Value (97.06, α)                                                                                   | 75.34  | Adjusted Chi Square Value (97.06, β)                         | 75.31  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 0.422  | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 0.422  |
| Lognormal GOF Test on Detected Observations Only                                                                          |        |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                   | 0.744  | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                   | 0      | Detected Data Not Lognormal at 5% Significance Level         |        |



TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |  |        |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|--------|--------------------------------------------------------------|--------|
| Lilliefors Test Statistic                                                                                                                 |  | 0.217  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              |  | 0.0889 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |  |        |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |  |        |                                                              |        |
| Mean in Original Scale                                                                                                                    |  | 0.179  | Mean in Log Scale                                            | -3.964 |
| SD in Original Scale                                                                                                                      |  | 1.608  | SD in Log Scale                                              | 1.981  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 |  | 0.257  | 95% Percentile Bootstrap UCL                                 | 0.27   |
| 95% BCA Bootstrap UCL                                                                                                                     |  | 0.288  | 95% Bootstrap t UCL                                          | 0.419  |
| 95% H-UCL (Log ROS)                                                                                                                       |  | N/A    |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |  |        |                                                              |        |
| KM Mean (logged)                                                                                                                          |  | -1.491 | KM Geo Mean                                                  | 0.225  |
| KM SD (logged)                                                                                                                            |  | 0.437  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        |  | 0.0139 | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            |  | 0.437  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        |  | 0.0139 |                                                              |        |
| DL/2 Statistics                                                                                                                           |  |        |                                                              |        |
| DL/2 Normal                                                                                                                               |  |        | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    |  | 0.526  | Mean in Log Scale                                            | -1.564 |
| SD in Original Scale                                                                                                                      |  | 1.766  | SD in Log Scale                                              | 1.114  |
| 95% t UCL (Assumes normality)                                                                                                             |  | 0.612  | 95% H-Stat UCL                                               | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |  |        |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |  |        |                                                              |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |  |        |                                                              |        |
| Suggested UCL to Use                                                                                                                      |  |        |                                                              |        |
| 95% KM (Chebyshev) UCL                                                                                                                    |  | 0.535  |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |  |        |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |  |        |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |  |        |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |  |        |                                                              |        |
| result (fluvial_acetone_67-64-1)                                                                                                          |  |        |                                                              |        |
| General Statistics                                                                                                                        |  |        |                                                              |        |
| Total Number of Observations                                                                                                              |  | 1137   | Number of Distinct Observations                              | 681    |
| Number of Detects                                                                                                                         |  | 870    | Number of Non-Detects                                        | 267    |
| Number of Distinct Detects                                                                                                                |  | 680    | Number of Distinct Non-Detects                               | 5      |
| Minimum Detect                                                                                                                            |  | 2.55   | Minimum Non-Detect                                           | 2.5    |
| Maximum Detect                                                                                                                            |  | 7790   | Maximum Non-Detect                                           | 25     |
| Variance Detects                                                                                                                          |  | 338305 | Percent Non-Detects                                          | 23.48% |
| Mean Detects                                                                                                                              |  | 228.4  | SD Detects                                                   | 581.6  |
| Median Detects                                                                                                                            |  | 18.75  | CV Detects                                                   | 2.546  |
| Skewness Detects                                                                                                                          |  | 6.302  | Kurtosis Detects                                             | 57.02  |
| Mean of Logged Detects                                                                                                                    |  | 3.554  | SD of Logged Detects                                         | 1.926  |
| Normal GOF Test on Detects Only                                                                                                           |  |        |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               |  | 0.433  | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                                   |  | 0      | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 |  | 0.349  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              |  | 0.0303 | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |  |        |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |  |        |                                                              |        |
| KM Mean                                                                                                                                   |  | 175.4  | KM Standard Error of Mean                                    | 15.35  |
| KM SD                                                                                                                                     |  | 517.4  | 95% KM (BCA) UCL                                             | 201.1  |
| 95% KM (t) UCL                                                                                                                            |  | 200.7  | 95% KM (Percentile Bootstrap) UCL                            | 201.3  |
| 95% KM (z) UCL                                                                                                                            |  | 200.7  | 95% KM Bootstrap t UCL                                       | 205.9  |
| 90% KM Chebyshev UCL                                                                                                                      |  | 221.5  | 95% KM Chebyshev UCL                                         | 242.3  |
| 97.5% KM Chebyshev UCL                                                                                                                    |  | 271.3  | 99% KM Chebyshev UCL                                         | 328.2  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |  |        |                                                              |        |
| A-D Test Statistic                                                                                                                        |  | 63.11  | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     |  | 0.857  | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        |  | 0.238  | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     |  | 0.0342 | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |  |        |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |  |        |                                                              |        |
| k hat (MLE)                                                                                                                               |  | 0.357  | k star (bias corrected MLE)                                  | 0.357  |
| Theta hat (MLE)                                                                                                                           |  | 639.7  | Theta star (bias corrected MLE)                              | 640.6  |
| nu hat (MLE)                                                                                                                              |  | 621.3  | nu star (bias corrected)                                     | 620.5  |
| Mean (detects)                                                                                                                            |  | 228.4  |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |  |        |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |  |        |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |  |        |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |  |        |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |  |        |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |  |        |                                                              |        |
| Minimum                                                                                                                                   |  | 0.01   | Mean                                                         | 174.8  |
| Maximum                                                                                                                                   |  | 7790   | Median                                                       | 9.5    |
| SD                                                                                                                                        |  | 517.9  | CV                                                           | 2.963  |
| k hat (MLE)                                                                                                                               |  | 0.208  | k star (bias corrected MLE)                                  | 0.208  |
| Theta hat (MLE)                                                                                                                           |  | 842.2  | Theta star (bias corrected MLE)                              | 842    |
| nu hat (MLE)                                                                                                                              |  | 471.9  | nu star (bias corrected)                                     | 472    |
| Adjusted Level of Significance (β)                                                                                                        |  | 0.0498 |                                                              |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |        |                                                              |        |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------------------------------------------------------------|--------|-------|
| Approximate Chi Square Value (472.03, $\alpha$ )                                                                                          |        | 422.6  | Adjusted Chi Square Value (472.03, $\beta$ )                 |        | 422.6 |
| 95% Gamma Approximate UCL (use when $n \geq 50$ )                                                                                         |        | 195.2  | 95% Gamma Adjusted UCL (use when $n < 50$ )                  |        | 195.2 |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |        |                                                              |        |       |
| Mean (KM)                                                                                                                                 | 175.4  |        | SD (KM)                                                      | 517.4  |       |
| Variance (KM)                                                                                                                             | 267724 |        | SE of Mean (KM)                                              | 15.35  |       |
| k hat (KM)                                                                                                                                | 0.115  |        | k star (KM)                                                  | 0.115  |       |
| nu hat (KM)                                                                                                                               | 261.3  |        | nu star (KM)                                                 | 262    |       |
| theta hat (KM)                                                                                                                            | 1526   |        | theta star (KM)                                              | 1523   |       |
| 80% gamma percentile (KM)                                                                                                                 | 146.7  |        | 90% gamma percentile (KM)                                    | 491.1  |       |
| 95% gamma percentile (KM)                                                                                                                 | 1006   |        | 99% gamma percentile (KM)                                    | 2593   |       |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |        |                                                              |        |       |
| Approximate Chi Square Value (261.96, $\alpha$ )                                                                                          |        | 225.5  | Adjusted Chi Square Value (261.96, $\beta$ )                 |        | 225.4 |
| 95% Gamma Approximate KM-UCL (use when $n \geq 50$ )                                                                                      |        | 203.8  | 95% Gamma Adjusted KM-UCL (use when $n < 50$ )               |        | 203.8 |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |        |                                                              |        |       |
| Shapiro Wilk Approximate Test Statistic                                                                                                   |        | 0.886  | Shapiro Wilk GOF Test                                        |        |       |
| 5% Shapiro Wilk P Value                                                                                                                   |        | 0      | Detected Data Not Lognormal at 5% Significance Level         |        |       |
| Lilliefors Test Statistic                                                                                                                 |        | 0.142  | Lilliefors GOF Test                                          |        |       |
| 5% Lilliefors Critical Value                                                                                                              |        | 0.0303 | Detected Data Not Lognormal at 5% Significance Level         |        |       |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |        |        |                                                              |        |       |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |        |                                                              |        |       |
| Mean in Original Scale                                                                                                                    | 175    |        | Mean in Log Scale                                            | 2.546  |       |
| SD in Original Scale                                                                                                                      | 517.8  |        | SD in Log Scale                                              | 2.553  |       |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 200.3  |        | 95% Percentile Bootstrap UCL                                 | 200.9  |       |
| 95% BCA Bootstrap UCL                                                                                                                     | 202.9  |        | 95% Bootstrap t UCL                                          | 203.8  |       |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A    |        |                                                              |        |       |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |        |                                                              |        |       |
| KM Mean (logged)                                                                                                                          | 2.941  |        | KM Geo Mean                                                  | 18.93  |       |
| KM SD (logged)                                                                                                                            | 2.017  |        | 95% Critical H Value (KM-Log)                                | N/A    |       |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0599 |        | 95% H-UCL (KM -Log)                                          | N/A    |       |
| KM SD (logged)                                                                                                                            | 2.017  |        | 95% Critical H Value (KM-Log)                                | N/A    |       |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0599 |        |                                                              |        |       |
| DL/2 Statistics                                                                                                                           |        |        |                                                              |        |       |
| DL/2 Normal                                                                                                                               |        |        | DL/2 Log-Transformed                                         |        |       |
| Mean in Original Scale                                                                                                                    | 175.1  |        | Mean in Log Scale                                            | 2.791  |       |
| SD in Original Scale                                                                                                                      | 517.7  |        | SD in Log Scale                                              | 2.183  |       |
| 95% t UCL (Assumes normality)                                                                                                             | 200.4  |        | 95% H-Stat UCL                                               | N/A    |       |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |        |                                                              |        |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |        |                                                              |        |       |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |        |        |                                                              |        |       |
| Suggested UCL to Use                                                                                                                      |        |        |                                                              |        |       |
| 95% KM (Chebyshev) UCL                                                                                                                    |        | 242.3  |                                                              |        |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |        |                                                              |        |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |        |                                                              |        |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |        |                                                              |        |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |        |                                                              |        |       |
| result (fluvial_carbon tetrachloride_56-23-5)                                                                                             |        |        |                                                              |        |       |
| General Statistics                                                                                                                        |        |        |                                                              |        |       |
| Total Number of Observations                                                                                                              | 1137   |        | Number of Distinct Observations                              | 190    |       |
| Number of Detects                                                                                                                         | 195    |        | Number of Non-Detects                                        | 942    |       |
| Number of Distinct Detects                                                                                                                | 182    |        | Number of Distinct Non-Detects                               | 10     |       |
| Minimum Detect                                                                                                                            | 0.278  |        | Minimum Non-Detect                                           | 0.25   |       |
| Maximum Detect                                                                                                                            | 196    |        | Maximum Non-Detect                                           | 25     |       |
| Variance Detects                                                                                                                          | 862.1  |        | Percent Non-Detects                                          | 82.85% |       |
| Mean Detects                                                                                                                              | 17.75  |        | SD Detects                                                   | 29.36  |       |
| Median Detects                                                                                                                            | 4.7    |        | CV Detects                                                   | 1.654  |       |
| Skewness Detects                                                                                                                          | 2.906  |        | Kurtosis Detects                                             | 10.73  |       |
| Mean of Logged Detects                                                                                                                    | 1.73   |        | SD of Logged Detects                                         | 1.593  |       |
| Normal GOF Test on Detects Only                                                                                                           |        |        |                                                              |        |       |
| Shapiro Wilk Test Statistic                                                                                                               |        | 0.63   | Normal GOF Test on Detected Observations Only                |        |       |
| 5% Shapiro Wilk P Value                                                                                                                   |        | 0      | Detected Data Not Normal at 5% Significance Level            |        |       |
| Lilliefors Test Statistic                                                                                                                 |        | 0.276  | Lilliefors GOF Test                                          |        |       |
| 5% Lilliefors Critical Value                                                                                                              |        | 0.0639 | Detected Data Not Normal at 5% Significance Level            |        |       |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |        |                                                              |        |       |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |        |                                                              |        |       |
| KM Mean                                                                                                                                   | 3.278  |        | KM Standard Error of Mean                                    | 0.411  |       |
| KM SD                                                                                                                                     | 13.8   |        | 95% KM (BCA) UCL                                             | 4.028  |       |
| 95% KM (t) UCL                                                                                                                            | 3.954  |        | 95% KM (Percentile Bootstrap) UCL                            | 4.022  |       |
| 95% KM (z) UCL                                                                                                                            | 3.953  |        | 95% KM Bootstrap t UCL                                       | 4.049  |       |
| 90% KM Chebyshev UCL                                                                                                                      | 4.51   |        | 95% KM Chebyshev UCL                                         | 5.068  |       |
| 97.5% KM Chebyshev UCL                                                                                                                    | 5.842  |        | 99% KM Chebyshev UCL                                         | 7.363  |       |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |        |                                                              |        |       |
| A-D Test Statistic                                                                                                                        |        | 6.029  | Anderson-Darling GOF Test                                    |        |       |
| 5% A-D Critical Value                                                                                                                     |        | 0.816  | Detected Data Not Gamma Distributed at 5% Significance Level |        |       |
| K-S Test Statistic                                                                                                                        |        | 0.173  | Kolmogorov-Smirnov GOF                                       |        |       |
| 5% K-S Critical Value                                                                                                                     |        | 0.0685 | Detected Data Not Gamma Distributed at 5% Significance Level |        |       |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |        |        |                                                              |        |       |



TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Gamma Statistics on Detected Data Only                                                                                                    |           |                                                      |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------|--------|
| k hat (MLE)                                                                                                                               | 0.547     | k star (bias corrected MLE)                          | 0.542  |
| Theta hat (MLE)                                                                                                                           | 32.48     | Theta star (bias corrected MLE)                      | 32.78  |
| nu hat (MLE)                                                                                                                              | 213.2     | nu star (bias corrected)                             | 211.2  |
| Mean (detects)                                                                                                                            | 17.75     |                                                      |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |           |                                                      |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |           |                                                      |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |           |                                                      |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |           |                                                      |        |
| This is especially true when the sample size is small.                                                                                    |           |                                                      |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |           |                                                      |        |
| Minimum                                                                                                                                   | 0.01      | Mean                                                 | 3.059  |
| Maximum                                                                                                                                   | 196       | Median                                               | 0.01   |
| SD                                                                                                                                        | 13.86     | CV                                                   | 4.529  |
| k hat (MLE)                                                                                                                               | 0.164     | k star (bias corrected MLE)                          | 0.164  |
| Theta hat (MLE)                                                                                                                           | 18.66     | Theta star (bias corrected MLE)                      | 18.64  |
| nu hat (MLE)                                                                                                                              | 372.9     | nu star (bias corrected)                             | 373.2  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498    |                                                      |        |
| Approximate Chi Square Value (373.20, α)                                                                                                  | 329.4     | Adjusted Chi Square Value (373.20, β)                | 329.4  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 3.466     | 95% Gamma Adjusted UCL (use when n<50)               | 3.466  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |           |                                                      |        |
| Mean (KM)                                                                                                                                 | 3.278     | SD (KM)                                              | 13.8   |
| Variance (KM)                                                                                                                             | 190.6     | SE of Mean (KM)                                      | 0.411  |
| k hat (KM)                                                                                                                                | 0.0564    | k star (KM)                                          | 0.0568 |
| nu hat (KM)                                                                                                                               | 128.2     | nu star (KM)                                         | 129.2  |
| theta hat (KM)                                                                                                                            | 58.13     | theta star (KM)                                      | 57.68  |
| 80% gamma percentile (KM)                                                                                                                 | 0.676     | 90% gamma percentile (KM)                            | 5.828  |
| 95% gamma percentile (KM)                                                                                                                 | 18.14     | 99% gamma percentile (KM)                            | 67.68  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                      |        |
| Approximate Chi Square Value (129.23, α)                                                                                                  | 104       | Adjusted Chi Square Value (129.23, β)                | 103.9  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 4.075     | 95% Gamma Adjusted KM-UCL (use when n<50)            | 4.076  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                      |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.954     | Shapiro Wilk GOF Test                                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.4736E-5 | Detected Data Not Lognormal at 5% Significance Level |        |
| Lilliefors Test Statistic                                                                                                                 | 0.0826    | Lilliefors GOF Test                                  |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0639    | Detected Data Not Lognormal at 5% Significance Level |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                      |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                      |        |
| Mean in Original Scale                                                                                                                    | 3.145     | Mean in Log Scale                                    | -3.146 |
| SD in Original Scale                                                                                                                      | 13.84     | SD in Log Scale                                      | 3.292  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 3.821     | 95% Percentile Bootstrap UCL                         | 3.872  |
| 95% BCA Bootstrap UCL                                                                                                                     | 3.934     | 95% Bootstrap t UCL                                  | 3.965  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A       |                                                      |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                      |        |
| KM Mean (logged)                                                                                                                          | -0.823    | KM Geo Mean                                          | 0.439  |
| KM SD (logged)                                                                                                                            | 1.356     | 95% Critical H Value (KM-Log)                        | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.041     | 95% H-UCL (KM -Log)                                  | N/A    |
| KM SD (logged)                                                                                                                            | 1.356     | 95% Critical H Value (KM-Log)                        | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.041     |                                                      |        |
| DL/2 Statistics                                                                                                                           |           |                                                      |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                 |        |
| Mean in Original Scale                                                                                                                    | 3.519     | Mean in Log Scale                                    | -0.847 |
| SD in Original Scale                                                                                                                      | 13.79     | SD in Log Scale                                      | 1.681  |
| 95% t UCL (Assumes normality)                                                                                                             | 4.192     | 95% H-Stat UCL                                       | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                      |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                      |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                      |        |
| Suggested UCL to Use                                                                                                                      |           |                                                      |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 5.068     |                                                      |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                      |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                      |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                      |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                      |        |
| result (fluvial_chloroform_67-66-3)                                                                                                       |           |                                                      |        |
| General Statistics                                                                                                                        |           |                                                      |        |
| Total Number of Observations                                                                                                              | 1137      | Number of Distinct Observations                      | 324    |
| Number of Detects                                                                                                                         | 370       | Number of Non-Detects                                | 767    |
| Number of Distinct Detects                                                                                                                | 317       | Number of Distinct Non-Detects                       | 10     |
| Minimum Detect                                                                                                                            | 0.125     | Minimum Non-Detect                                   | 0.125  |
| Maximum Detect                                                                                                                            | 22100     | Maximum Non-Detect                                   | 12.5   |
| Variance Detects                                                                                                                          | 2395418   | Percent Non-Detects                                  | 67.46% |
| Mean Detects                                                                                                                              | 188.2     | SD Detects                                           | 1548   |
| Median Detects                                                                                                                            | 0.884     | CV Detects                                           | 8.224  |
| Skewness Detects                                                                                                                          | 10.8      | Kurtosis Detects                                     | 131.8  |
| Mean of Logged Detects                                                                                                                    | 0.265     | SD of Logged Detects                                 | 2.062  |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                      |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.13      | Normal GOF Test on Detected Observations Only        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0         | Detected Data Not Normal at 5% Significance Level    |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                              |           |                                                              |                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|---------------------------------------------------|--|
| Lilliefors Test Statistic                                                                                                    |           | 0.5                                                          | Lilliefors GOF Test                               |  |
| 5% Lilliefors Critical Value                                                                                                 |           | 0.0464                                                       | Detected Data Not Normal at 5% Significance Level |  |
| Detected Data Not Normal at 5% Significance Level                                                                            |           |                                                              |                                                   |  |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                       |           |                                                              |                                                   |  |
| KM Mean                                                                                                                      | 61.35     | KM Standard Error of Mean                                    | 26.31                                             |  |
| KM SD                                                                                                                        | 886.1     | 95% KM (BCA) UCL                                             | 111.6                                             |  |
| 95% KM (t) UCL                                                                                                               | 104.7     | 95% KM (Percentile Bootstrap) UCL                            | 107.1                                             |  |
| 95% KM (z) UCL                                                                                                               | 104.6     | 95% KM Bootstrap t UCL                                       | 147.6                                             |  |
| 90% KM Chebyshev UCL                                                                                                         | 140.3     | 95% KM Chebyshev UCL                                         | 176                                               |  |
| 97.5% KM Chebyshev UCL                                                                                                       | 225.7     | 99% KM Chebyshev UCL                                         | 323.2                                             |  |
| Gamma GOF Tests on Detected Observations Only                                                                                |           |                                                              |                                                   |  |
| A-D Test Statistic                                                                                                           | 85.95     | Anderson-Darling GOF Test                                    |                                                   |  |
| 5% A-D Critical Value                                                                                                        | 0.966     | Detected Data Not Gamma Distributed at 5% Significance Level |                                                   |  |
| K-S Test Statistic                                                                                                           | 0.375     | Kolmogorov-Smirnov GOF                                       |                                                   |  |
| 5% K-S Critical Value                                                                                                        | 0.0533    | Detected Data Not Gamma Distributed at 5% Significance Level |                                                   |  |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                 |           |                                                              |                                                   |  |
| Gamma Statistics on Detected Data Only                                                                                       |           |                                                              |                                                   |  |
| k hat (MLE)                                                                                                                  | 0.154     | k star (bias corrected MLE)                                  | 0.155                                             |  |
| Theta hat (MLE)                                                                                                              | 1222      | Theta star (bias corrected MLE)                              | 1218                                              |  |
| nu hat (MLE)                                                                                                                 | 113.9     | nu star (bias corrected)                                     | 114.4                                             |  |
| Mean (detects)                                                                                                               | 188.2     |                                                              |                                                   |  |
| Gamma ROS Statistics using Imputed Non-Detects                                                                               |           |                                                              |                                                   |  |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                 |           |                                                              |                                                   |  |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)    |           |                                                              |                                                   |  |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                 |           |                                                              |                                                   |  |
| This is especially true when the sample size is small.                                                                       |           |                                                              |                                                   |  |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                  |           |                                                              |                                                   |  |
| Minimum                                                                                                                      | 0.01      | Mean                                                         | 61.35                                             |  |
| Maximum                                                                                                                      | 22100     | Median                                                       | 0.01                                              |  |
| SD                                                                                                                           | 886.5     | CV                                                           | 14.45                                             |  |
| k hat (MLE)                                                                                                                  | 0.112     | k star (bias corrected MLE)                                  | 0.113                                             |  |
| Theta hat (MLE)                                                                                                              | 546.6     | Theta star (bias corrected MLE)                              | 545.2                                             |  |
| nu hat (MLE)                                                                                                                 | 255.2     | nu star (bias corrected)                                     | 255.9                                             |  |
| Adjusted Level of Significance (β)                                                                                           | 0.0498    |                                                              |                                                   |  |
| Approximate Chi Square Value (255.90, α)                                                                                     | 219.9     | Adjusted Chi Square Value (255.90, β)                        | 219.8                                             |  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                   | 71.41     | 95% Gamma Adjusted UCL (use when n<50)                       | 71.42                                             |  |
| Estimates of Gamma Parameters using KM Estimates                                                                             |           |                                                              |                                                   |  |
| Mean (KM)                                                                                                                    | 61.35     | SD (KM)                                                      | 886.1                                             |  |
| Variance (KM)                                                                                                                | 785167    | SE of Mean (KM)                                              | 26.31                                             |  |
| k hat (KM)                                                                                                                   | 0.00479   | k star (KM)                                                  | 0.00537                                           |  |
| nu hat (KM)                                                                                                                  | 10.9      | nu star (KM)                                                 | 12.2                                              |  |
| theta hat (KM)                                                                                                               | 12798     | theta star (KM)                                              | 11430                                             |  |
| 80% gamma percentile (KM)                                                                                                    | 5.666E-15 | 90% gamma percentile (KM)                                    | 1.9225E-5                                         |  |
| 95% gamma percentile (KM)                                                                                                    | 0.456     | 99% gamma percentile (KM)                                    | 1087                                              |  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                           |           |                                                              |                                                   |  |
| Approximate Chi Square Value (12.20, α)                                                                                      | 5.362     | Adjusted Chi Square Value (12.20, β)                         | 5.357                                             |  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                | 139.6     | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 139.8                                             |  |
| Lognormal GOF Test on Detected Observations Only                                                                             |           |                                                              |                                                   |  |
| Shapiro Wilk Approximate Test Statistic                                                                                      | 0.85      | Shapiro Wilk GOF Test                                        |                                                   |  |
| 5% Shapiro Wilk P Value                                                                                                      | 0         | Detected Data Not Lognormal at 5% Significance Level         |                                                   |  |
| Lilliefors Test Statistic                                                                                                    | 0.128     | Lilliefors GOF Test                                          |                                                   |  |
| 5% Lilliefors Critical Value                                                                                                 | 0.0464    | Detected Data Not Lognormal at 5% Significance Level         |                                                   |  |
| Detected Data Not Lognormal at 5% Significance Level                                                                         |           |                                                              |                                                   |  |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                           |           |                                                              |                                                   |  |
| Mean in Original Scale                                                                                                       | 61.28     | Mean in Log Scale                                            | -3.445                                            |  |
| SD in Original Scale                                                                                                         | 886.5     | SD in Log Scale                                              | 3.503                                             |  |
| 95% t UCL (assumes normality of ROS data)                                                                                    | 104.6     | 95% Percentile Bootstrap UCL                                 | 108.2                                             |  |
| 95% BCA Bootstrap UCL                                                                                                        | 129.6     | 95% Bootstrap t UCL                                          | 149.4                                             |  |
| 95% H-UCL (Log ROS)                                                                                                          | N/A       |                                                              |                                                   |  |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                             |           |                                                              |                                                   |  |
| KM Mean (logged)                                                                                                             | -1.254    | KM Geo Mean                                                  | 0.285                                             |  |
| KM SD (logged)                                                                                                               | 1.608     | 95% Critical H Value (KM-Log)                                | N/A                                               |  |
| KM Standard Error of Mean (logged)                                                                                           | 0.0486    | 95% H-UCL (KM -Log)                                          | N/A                                               |  |
| KM SD (logged)                                                                                                               | 1.608     | 95% Critical H Value (KM-Log)                                | N/A                                               |  |
| KM Standard Error of Mean (logged)                                                                                           | 0.0486    |                                                              |                                                   |  |
| DL/2 Statistics                                                                                                              |           |                                                              |                                                   |  |
| DL/2 Normal                                                                                                                  |           | DL/2 Log-Transformed                                         |                                                   |  |
| Mean in Original Scale                                                                                                       | 61.45     | Mean in Log Scale                                            | -1.246                                            |  |
| SD in Original Scale                                                                                                         | 886.5     | SD in Log Scale                                              | 1.834                                             |  |
| 95% t UCL (Assumes normality)                                                                                                | 104.7     | 95% H-Stat UCL                                               | N/A                                               |  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                            |           |                                                              |                                                   |  |
| Nonparametric Distribution Free UCL Statistics                                                                               |           |                                                              |                                                   |  |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                       |           |                                                              |                                                   |  |
| Suggested UCL to Use                                                                                                         |           |                                                              |                                                   |  |
| 95% KM (Chebyshev) UCL                                                                                                       | 176       |                                                              |                                                   |  |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. |           |                                                              |                                                   |  |
| Recommendations are based upon data size, data distribution, and skewness.                                                   |           |                                                              |                                                   |  |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).     |           |                                                              |                                                   |  |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (fluvial\_cis-1,2-dichloroethene\_156-59-2)

|                                                                                                                           |        |                                                              |        |
|---------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|--------|
| General Statistics                                                                                                        |        |                                                              |        |
| Total Number of Observations                                                                                              | 1137   | Number of Distinct Observations                              | 707    |
| Number of Detects                                                                                                         | 907    | Number of Non-Detects                                        | 230    |
| Number of Distinct Detects                                                                                                | 702    | Number of Distinct Non-Detects                               | 7      |
| Minimum Detect                                                                                                            | 0.251  | Minimum Non-Detect                                           | 0.25   |
| Maximum Detect                                                                                                            | 323    | Maximum Non-Detect                                           | 12.5   |
| Variance Detects                                                                                                          | 1549   | Percent Non-Detects                                          | 20.23% |
| Mean Detects                                                                                                              | 25.7   | SD Detects                                                   | 39.36  |
| Median Detects                                                                                                            | 8.45   | CV Detects                                                   | 1.532  |
| Skewness Detects                                                                                                          | 2.546  | Kurtosis Detects                                             | 8.462  |
| Mean of Logged Detects                                                                                                    | 1.975  | SD of Logged Detects                                         | 1.818  |
| Normal GOF Test on Detects Only                                                                                           |        |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.677  | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                 | 0.259  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.0297 | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                         |        |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |        |                                                              |        |
| KM Mean                                                                                                                   | 20.57  | KM Standard Error of Mean                                    | 1.086  |
| KM SD                                                                                                                     | 36.58  | 95% KM (BCA) UCL                                             | 22.54  |
| 95% KM (t) UCL                                                                                                            | 22.36  | 95% KM (Percentile Bootstrap) UCL                            | 22.43  |
| 95% KM (z) UCL                                                                                                            | 22.36  | 95% KM Bootstrap t UCL                                       | 22.43  |
| 90% KM Chebyshev UCL                                                                                                      | 23.83  | 95% KM Chebyshev UCL                                         | 25.3   |
| 97.5% KM Chebyshev UCL                                                                                                    | 27.35  | 99% KM Chebyshev UCL                                         | 31.37  |
| Gamma GOF Tests on Detected Observations Only                                                                             |        |                                                              |        |
| A-D Test Statistic                                                                                                        | 12.92  | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                     | 0.824  | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                        | 0.0788 | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                     | 0.0327 | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                              |        |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                    |        |                                                              |        |
| k hat (MLE)                                                                                                               | 0.5    | k star (bias corrected MLE)                                  | 0.499  |
| Theta hat (MLE)                                                                                                           | 51.41  | Theta star (bias corrected MLE)                              | 51.51  |
| nu hat (MLE)                                                                                                              | 906.7  | nu star (bias corrected)                                     | 905    |
| Mean (detects)                                                                                                            | 25.7   |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |        |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |        |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |        |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |        |                                                              |        |
| This is especially true when the sample size is small.                                                                    |        |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |        |                                                              |        |
| Minimum                                                                                                                   | 0.01   | Mean                                                         | 20.51  |
| Maximum                                                                                                                   | 323    | Median                                                       | 3.98   |
| SD                                                                                                                        | 36.63  | CV                                                           | 1.786  |
| k hat (MLE)                                                                                                               | 0.293  | k star (bias corrected MLE)                                  | 0.293  |
| Theta hat (MLE)                                                                                                           | 69.91  | Theta star (bias corrected MLE)                              | 69.95  |
| nu hat (MLE)                                                                                                              | 667.3  | nu star (bias corrected)                                     | 666.9  |
| Adjusted Level of Significance (β)                                                                                        | 0.0498 |                                                              |        |
| Approximate Chi Square Value (666.87, α)                                                                                  | 608    | Adjusted Chi Square Value (666.87, β)                        | 607.9  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 22.5   | 95% Gamma Adjusted UCL (use when n<50)                       | 22.5   |
| Estimates of Gamma Parameters using KM Estimates                                                                          |        |                                                              |        |
| Mean (KM)                                                                                                                 | 20.57  | SD (KM)                                                      | 36.58  |
| Variance (KM)                                                                                                             | 1338   | SE of Mean (KM)                                              | 1.086  |
| k hat (KM)                                                                                                                | 0.316  | k star (KM)                                                  | 0.316  |
| nu hat (KM)                                                                                                               | 719    | nu star (KM)                                                 | 718.4  |
| theta hat (KM)                                                                                                            | 65.06  | theta star (KM)                                              | 65.11  |
| 80% gamma percentile (KM)                                                                                                 | 31.93  | 90% gamma percentile (KM)                                    | 60.28  |
| 95% gamma percentile (KM)                                                                                                 | 92.54  | 99% gamma percentile (KM)                                    | 175.9  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |        |                                                              |        |
| Approximate Chi Square Value (718.43, α)                                                                                  | 657.2  | Adjusted Chi Square Value (718.43, β)                        | 657.2  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 22.49  | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 22.49  |
| Lognormal GOF Test on Detected Observations Only                                                                          |        |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                   | 0.941  | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                   | 0      | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                 | 0.0615 | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.0297 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                      |        |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                        |        |                                                              |        |
| Mean in Original Scale                                                                                                    | 20.55  | Mean in Log Scale                                            | 1.186  |
| SD in Original Scale                                                                                                      | 36.61  | SD in Log Scale                                              | 2.316  |
| 95% t UCL (assumes normality of ROS data)                                                                                 | 22.34  | 95% Percentile Bootstrap UCL                                 | 22.36  |
| 95% BCA Bootstrap UCL                                                                                                     | 22.35  | 95% Bootstrap t UCL                                          | 22.51  |
| 95% H-UCL (Log ROS)                                                                                                       | N/A    |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                          |        |                                                              |        |
| KM Mean (logged)                                                                                                          | 1.315  | KM Geo Mean                                                  | 3.724  |
| KM SD (logged)                                                                                                            | 2.096  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                        | 0.0624 | 95% H-UCL (KM -Log)                                          | N/A    |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |                                    |                                                                 |                                   |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------|-----------------------------------|-------|
|                                                                                                                                           | KM SD (logged)                     | 2.096                                                           | 95% Critical H Value (KM-Log)     | N/A   |
|                                                                                                                                           | KM Standard Error of Mean (logged) | 0.0624                                                          |                                   |       |
| DL/2 Statistics                                                                                                                           |                                    |                                                                 |                                   |       |
| DL/2 Normal                                                                                                                               |                                    | DL/2 Log-Transformed                                            |                                   |       |
|                                                                                                                                           | Mean in Original Scale             | 20.58                                                           | Mean in Log Scale                 | 1.215 |
|                                                                                                                                           | SD in Original Scale               | 36.6                                                            | SD in Log Scale                   | 2.254 |
|                                                                                                                                           | 95% t UCL (Assumes normality)      | 22.37                                                           | 95% H-Stat UCL                    | N/A   |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |                                    |                                                                 |                                   |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |                                    |                                                                 |                                   |       |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |                                    |                                                                 |                                   |       |
| Suggested UCL to Use                                                                                                                      |                                    |                                                                 |                                   |       |
|                                                                                                                                           | 95% KM (Chebyshev) UCL             | 25.3                                                            |                                   |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |                                    |                                                                 |                                   |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |                                    |                                                                 |                                   |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |                                    |                                                                 |                                   |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |                                    |                                                                 |                                   |       |
| result (fluvial_mek (2-butanone)_78-93-3)                                                                                                 |                                    |                                                                 |                                   |       |
| General Statistics                                                                                                                        |                                    |                                                                 |                                   |       |
| Total Number of Observations                                                                                                              | 1137                               | Number of Distinct Observations                                 | 341                               |       |
| Number of Detects                                                                                                                         | 377                                | Number of Non-Detects                                           | 760                               |       |
| Number of Distinct Detects                                                                                                                | 335                                | Number of Distinct Non-Detects                                  | 6                                 |       |
| Minimum Detect                                                                                                                            | 2.88                               | Minimum Non-Detect                                              | 2.5                               |       |
| Maximum Detect                                                                                                                            | 20800                              | Maximum Non-Detect                                              | 50                                |       |
| Variance Detects                                                                                                                          | 6503469                            | Percent Non-Detects                                             | 66.84%                            |       |
| Mean Detects                                                                                                                              | 1700                               | SD Detects                                                      | 2550                              |       |
| Median Detects                                                                                                                            | 772                                | CV Detects                                                      | 1.5                               |       |
| Skewness Detects                                                                                                                          | 3.173                              | Kurtosis Detects                                                | 14.3                              |       |
| Mean of Logged Detects                                                                                                                    | 6.112                              | SD of Logged Detects                                            | 2.094                             |       |
| Normal GOF Test on Detects Only                                                                                                           |                                    |                                                                 |                                   |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.671                              | Normal GOF Test on Detected Observations Only                   |                                   |       |
| 5% Shapiro Wilk P Value                                                                                                                   | 0                                  | Detected Data Not Normal at 5% Significance Level               |                                   |       |
| Lilliefors Test Statistic                                                                                                                 | 0.253                              | Lilliefors GOF Test                                             |                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.046                              | Detected Data Not Normal at 5% Significance Level               |                                   |       |
| Detected Data Not Normal at 5% Significance Level                                                                                         |                                    |                                                                 |                                   |       |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |                                    |                                                                 |                                   |       |
|                                                                                                                                           | KM Mean                            | 565.4                                                           | KM Standard Error of Mean         | 49.6  |
|                                                                                                                                           | KM SD                              | 1670                                                            | 95% KM (BCA) UCL                  | 646.8 |
|                                                                                                                                           | 95% KM (t) UCL                     | 647                                                             | 95% KM (Percentile Bootstrap) UCL | 648.9 |
|                                                                                                                                           | 95% KM (z) UCL                     | 646.9                                                           | 95% KM Bootstrap t UCL            | 658.2 |
|                                                                                                                                           | 90% KM Chebyshev UCL               | 714.2                                                           | 95% KM Chebyshev UCL              | 781.6 |
|                                                                                                                                           | 97.5% KM Chebyshev UCL             | 875.1                                                           | 99% KM Chebyshev UCL              | 1059  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |                                    |                                                                 |                                   |       |
| A-D Test Statistic                                                                                                                        | 1.01                               | Anderson-Darling GOF Test                                       |                                   |       |
| 5% A-D Critical Value                                                                                                                     | 0.827                              | Detected Data Not Gamma Distributed at 5% Significance Level    |                                   |       |
| K-S Test Statistic                                                                                                                        | 0.0417                             | Kolmogorov-Smirnov GOF                                          |                                   |       |
| 5% K-S Critical Value                                                                                                                     | 0.0496                             | Detected data appear Gamma Distributed at 5% Significance Level |                                   |       |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                    |                                    |                                                                 |                                   |       |
| Gamma Statistics on Detected Data Only                                                                                                    |                                    |                                                                 |                                   |       |
| k hat (MLE)                                                                                                                               | 0.482                              | k star (bias corrected MLE)                                     | 0.48                              |       |
| Theta hat (MLE)                                                                                                                           | 3529                               | Theta star (bias corrected MLE)                                 | 3544                              |       |
| nu hat (MLE)                                                                                                                              | 363.3                              | nu star (bias corrected)                                        | 361.7                             |       |
| Mean (detects)                                                                                                                            | 1700                               |                                                                 |                                   |       |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |                                    |                                                                 |                                   |       |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |                                    |                                                                 |                                   |       |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |                                    |                                                                 |                                   |       |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |                                    |                                                                 |                                   |       |
| This is especially true when the sample size is small.                                                                                    |                                    |                                                                 |                                   |       |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |                                    |                                                                 |                                   |       |
| Minimum                                                                                                                                   | 0.01                               | Mean                                                            | 563.7                             |       |
| Maximum                                                                                                                                   | 20800                              | Median                                                          | 0.01                              |       |
| SD                                                                                                                                        | 1671                               | CV                                                              | 2.965                             |       |
| k hat (MLE)                                                                                                                               | 0.109                              | k star (bias corrected MLE)                                     | 0.109                             |       |
| Theta hat (MLE)                                                                                                                           | 5182                               | Theta star (bias corrected MLE)                                 | 5168                              |       |
| nu hat (MLE)                                                                                                                              | 247.4                              | nu star (bias corrected)                                        | 248                               |       |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498                             |                                                                 |                                   |       |
| Approximate Chi Square Value (248.04, α)                                                                                                  | 212.6                              | Adjusted Chi Square Value (248.04, β)                           | 212.5                             |       |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 657.7                              | 95% Gamma Adjusted UCL (use when n<50)                          | 657.9                             |       |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |                                    |                                                                 |                                   |       |
| Mean (KM)                                                                                                                                 | 565.4                              | SD (KM)                                                         | 1670                              |       |
| Variance (KM)                                                                                                                             | 2789329                            | SE of Mean (KM)                                                 | 49.6                              |       |
| k hat (KM)                                                                                                                                | 0.115                              | k star (KM)                                                     | 0.115                             |       |
| nu hat (KM)                                                                                                                               | 260.6                              | nu star (KM)                                                    | 261.2                             |       |
| theta hat (KM)                                                                                                                            | 4934                               | theta star (KM)                                                 | 4921                              |       |
| 80% gamma percentile (KM)                                                                                                                 | 471.3                              | 90% gamma percentile (KM)                                       | 1582                              |       |
| 95% gamma percentile (KM)                                                                                                                 | 3243                               | 99% gamma percentile (KM)                                       | 8370                              |       |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |                                    |                                                                 |                                   |       |
| Approximate Chi Square Value (261.23, α)                                                                                                  | 224.8                              | Adjusted Chi Square Value (261.23, β)                           | 224.8                             |       |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 657                                | 95% Gamma Adjusted KM-UCL (use when n<50)                       | 657.1                             |       |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|--------|
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.92   | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.104  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.046  | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |        |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                              |        |
| Mean in Original Scale                                                                                                                    | 568.5  | Mean in Log Scale                                            | 2.282  |
| SD in Original Scale                                                                                                                      | 1670   | SD in Log Scale                                              | 3.535  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 650    | 95% Percentile Bootstrap UCL                                 | 650    |
| 95% BCA Bootstrap UCL                                                                                                                     | 657.7  | 95% Bootstrap t UCL                                          | 663    |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A    |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                              |        |
| KM Mean (logged)                                                                                                                          | 2.64   | KM Geo Mean                                                  | 14.01  |
| KM SD (logged)                                                                                                                            | 2.726  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.081  | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            | 2.726  | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.081  |                                                              |        |
| DL/2 Statistics                                                                                                                           |        |                                                              |        |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 564.7  | Mean in Log Scale                                            | 2.213  |
| SD in Original Scale                                                                                                                      | 1671   | SD in Log Scale                                              | 3.011  |
| 95% t UCL (Assumes normality)                                                                                                             | 646.3  | 95% H-Stat UCL                                               | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                              |        |
| Detected Data appear Approximate Gamma Distributed at 5% Significance Level                                                               |        |                                                              |        |
| Suggested UCL to Use                                                                                                                      |        |                                                              |        |
| 95% KM Approximate Gamma UCL                                                                                                              | 657    |                                                              |        |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |        |                                                              |        |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |        |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                              |        |
| result (fluvial_methyl t-butyl ether (mtbe)_1634-04-4)                                                                                    |        |                                                              |        |
| General Statistics                                                                                                                        |        |                                                              |        |
| Total Number of Observations                                                                                                              | 1137   | Number of Distinct Observations                              | 355    |
| Number of Detects                                                                                                                         | 409    | Number of Non-Detects                                        | 728    |
| Number of Distinct Detects                                                                                                                | 348    | Number of Distinct Non-Detects                               | 8      |
| Minimum Detect                                                                                                                            | 0.504  | Minimum Non-Detect                                           | 0.5    |
| Maximum Detect                                                                                                                            | 78.2   | Maximum Non-Detect                                           | 50     |
| Variance Detects                                                                                                                          | 153.1  | Percent Non-Detects                                          | 64.03% |
| Mean Detects                                                                                                                              | 10.78  | SD Detects                                                   | 12.37  |
| Median Detects                                                                                                                            | 5.52   | CV Detects                                                   | 1.148  |
| Skewness Detects                                                                                                                          | 1.949  | Kurtosis Detects                                             | 4.446  |
| Mean of Logged Detects                                                                                                                    | 1.73   | SD of Logged Detects                                         | 1.212  |
| Normal GOF Test on Detects Only                                                                                                           |        |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.766  | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.203  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0442 | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |                                                              |        |
| KM Mean                                                                                                                                   | 4.326  | KM Standard Error of Mean                                    | 0.265  |
| KM SD                                                                                                                                     | 8.895  | 95% KM (BCA) UCL                                             | 4.793  |
| 95% KM (t) UCL                                                                                                                            | 4.762  | 95% KM (Percentile Bootstrap) UCL                            | 4.775  |
| 95% KM (z) UCL                                                                                                                            | 4.762  | 95% KM Bootstrap t UCL                                       | 4.813  |
| 90% KM Chebyshev UCL                                                                                                                      | 5.122  | 95% KM Chebyshev UCL                                         | 5.482  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 5.983  | 99% KM Chebyshev UCL                                         | 6.966  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |                                                              |        |
| A-D Test Statistic                                                                                                                        | 4.289  | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.79   | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.0858 | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.0463 | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |        |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                              |        |
| k hat (MLE)                                                                                                                               | 0.903  | k star (bias corrected MLE)                                  | 0.898  |
| Theta hat (MLE)                                                                                                                           | 11.93  | Theta star (bias corrected MLE)                              | 12     |
| nu hat (MLE)                                                                                                                              | 738.8  | nu star (bias corrected)                                     | 734.7  |
| Mean (detects)                                                                                                                            | 10.78  |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |        |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                              |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |           |                                                      |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------|--------|
| Minimum                                                                                                                                   | 0.01      | Mean                                                 | 4.006  |
| Maximum                                                                                                                                   | 78.2      | Median                                               | 0.01   |
| SD                                                                                                                                        | 9.03      | CV                                                   | 2.254  |
| k hat (MLE)                                                                                                                               | 0.207     | k star (bias corrected MLE)                          | 0.207  |
| Theta hat (MLE)                                                                                                                           | 19.34     | Theta star (bias corrected MLE)                      | 19.33  |
| nu hat (MLE)                                                                                                                              | 471.1     | nu star (bias corrected)                             | 471.2  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498    |                                                      |        |
| Approximate Chi Square Value (471.15, α)                                                                                                  | 421.8     | Adjusted Chi Square Value (471.15, β)                | 421.8  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 4.474     | 95% Gamma Adjusted UCL (use when n<50)               | 4.475  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |           |                                                      |        |
| Mean (KM)                                                                                                                                 | 4.326     | SD (KM)                                              | 8.895  |
| Variance (KM)                                                                                                                             | 79.13     | SE of Mean (KM)                                      | 0.265  |
| k hat (KM)                                                                                                                                | 0.236     | k star (KM)                                          | 0.236  |
| nu hat (KM)                                                                                                                               | 537.7     | nu star (KM)                                         | 537.6  |
| theta hat (KM)                                                                                                                            | 18.29     | theta star (KM)                                      | 18.3   |
| 80% gamma percentile (KM)                                                                                                                 | 6.152     | 90% gamma percentile (KM)                            | 13.03  |
| 95% gamma percentile (KM)                                                                                                                 | 21.28     | 99% gamma percentile (KM)                            | 43.43  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                      |        |
| Approximate Chi Square Value (537.62, α)                                                                                                  | 484.8     | Adjusted Chi Square Value (537.62, β)                | 484.8  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 4.796     | 95% Gamma Adjusted KM-UCL (use when n<50)            | 4.797  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                      |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.955     | Shapiro Wilk GOF Test                                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.388E-12 | Detected Data Not Lognormal at 5% Significance Level |        |
| Lilliefors Test Statistic                                                                                                                 | 0.0468    | Lilliefors GOF Test                                  |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0442    | Detected Data Not Lognormal at 5% Significance Level |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                      |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                      |        |
| Mean in Original Scale                                                                                                                    | 4.212     | Mean in Log Scale                                    | -0.293 |
| SD in Original Scale                                                                                                                      | 8.923     | SD in Log Scale                                      | 2.018  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 4.648     | 95% Percentile Bootstrap UCL                         | 4.643  |
| 95% BCA Bootstrap UCL                                                                                                                     | 4.698     | 95% Bootstrap t UCL                                  | 4.684  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A       |                                                      |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                      |        |
| KM Mean (logged)                                                                                                                          | 0.252     | KM Geo Mean                                          | 1.286  |
| KM SD (logged)                                                                                                                            | 1.374     | 95% Critical H Value (KM-Log)                        | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0421    | 95% H-UCL (KM -Log)                                  | N/A    |
| KM SD (logged)                                                                                                                            | 1.374     | 95% Critical H Value (KM-Log)                        | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0421    |                                                      |        |
| DL/2 Statistics                                                                                                                           |           |                                                      |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                 |        |
| Mean in Original Scale                                                                                                                    | 4.694     | Mean in Log Scale                                    | 0.2    |
| SD in Original Scale                                                                                                                      | 8.915     | SD in Log Scale                                      | 1.65   |
| 95% t UCL (Assumes normality)                                                                                                             | 5.13      | 95% H-Stat UCL                                       | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                      |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                      |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                      |        |
| Suggested UCL to Use                                                                                                                      |           |                                                      |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 5.482     |                                                      |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                      |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                      |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                      |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                      |        |
| result (fluvial_methylene chloride_75-09-2)                                                                                               |           |                                                      |        |
| General Statistics                                                                                                                        |           |                                                      |        |
| Total Number of Observations                                                                                                              | 1137      | Number of Distinct Observations                      | 62     |
| Number of Detects                                                                                                                         | 53        | Number of Non-Detects                                | 1084   |
| Number of Distinct Detects                                                                                                                | 52        | Number of Distinct Non-Detects                       | 10     |
| Minimum Detect                                                                                                                            | 0.26      | Minimum Non-Detect                                   | 0.25   |
| Maximum Detect                                                                                                                            | 177       | Maximum Non-Detect                                   | 25     |
| Variance Detects                                                                                                                          | 1089      | Percent Non-Detects                                  | 95.34% |
| Mean Detects                                                                                                                              | 20.87     | SD Detects                                           | 33     |
| Median Detects                                                                                                                            | 5.29      | CV Detects                                           | 1.581  |
| Skewness Detects                                                                                                                          | 2.789     | Kurtosis Detects                                     | 9.587  |
| Mean of Logged Detects                                                                                                                    | 1.813     | SD of Logged Detects                                 | 1.765  |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                      |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.661     | Normal GOF Test on Detected Observations Only        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 6.106E-15 | Detected Data Not Normal at 5% Significance Level    |        |
| Lilliefors Test Statistic                                                                                                                 | 0.266     | Lilliefors GOF Test                                  |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.121     | Detected Data Not Normal at 5% Significance Level    |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |           |                                                      |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |           |                                                      |        |
| KM Mean                                                                                                                                   | 1.215     | KM Standard Error of Mean                            | 0.248  |
| KM SD                                                                                                                                     | 8.289     | 95% KM (BCA) UCL                                     | 1.687  |
| 95% KM (t) UCL                                                                                                                            | 1.624     | 95% KM (Percentile Bootstrap) UCL                    | 1.641  |
| 95% KM (z) UCL                                                                                                                            | 1.624     | 95% KM Bootstrap t UCL                               | 1.792  |
| 90% KM Chebyshev UCL                                                                                                                      | 1.96      | 95% KM Chebyshev UCL                                 | 2.297  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 2.765     | 99% KM Chebyshev UCL                                 | 3.685  |



TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Gamma GOF Tests on Detected Observations Only                                                                                             |         |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|--------|
| A-D Test Statistic                                                                                                                        | 1.057   | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.813   | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.145   | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.129   | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |         |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |         |                                                              |        |
| k hat (MLE)                                                                                                                               | 0.516   | k star (bias corrected MLE)                                  | 0.499  |
| Theta hat (MLE)                                                                                                                           | 40.44   | Theta star (bias corrected MLE)                              | 41.79  |
| nu hat (MLE)                                                                                                                              | 54.7    | nu star (bias corrected)                                     | 52.94  |
| Mean (detects)                                                                                                                            | 20.87   |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |         |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |         |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |         |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |         |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |         |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |         |                                                              |        |
| Minimum                                                                                                                                   | 0.01    | Mean                                                         | 0.982  |
| Maximum                                                                                                                                   | 177     | Median                                                       | 0.01   |
| SD                                                                                                                                        | 8.319   | CV                                                           | 8.469  |
| k hat (MLE)                                                                                                                               | 0.175   | k star (bias corrected MLE)                                  | 0.175  |
| Theta hat (MLE)                                                                                                                           | 5.609   | Theta star (bias corrected MLE)                              | 5.605  |
| nu hat (MLE)                                                                                                                              | 398.3   | nu star (bias corrected)                                     | 398.6  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498  |                                                              |        |
| Approximate Chi Square Value (398.58, α)                                                                                                  | 353.3   | Adjusted Chi Square Value (398.58, β)                        | 353.3  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 1.108   | 95% Gamma Adjusted UCL (use when n<50)                       | 1.108  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |         |                                                              |        |
| Mean (KM)                                                                                                                                 | 1.215   | SD (KM)                                                      | 8.289  |
| Variance (KM)                                                                                                                             | 68.71   | SE of Mean (KM)                                              | 0.248  |
| k hat (KM)                                                                                                                                | 0.0215  | k star (KM)                                                  | 0.022  |
| nu hat (KM)                                                                                                                               | 48.88   | nu star (KM)                                                 | 50.08  |
| theta hat (KM)                                                                                                                            | 56.54   | theta star (KM)                                              | 55.18  |
| 80% gamma percentile (KM)                                                                                                                 | 0.00126 | 90% gamma percentile (KM)                                    | 0.265  |
| 95% gamma percentile (KM)                                                                                                                 | 3.252   | 99% gamma percentile (KM)                                    | 33.52  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |         |                                                              |        |
| Approximate Chi Square Value (50.08, α)                                                                                                   | 34.84   | Adjusted Chi Square Value (50.08, β)                         | 34.82  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 1.747   | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 1.748  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |         |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.953   | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0.0652  | Detected Data appear Lognormal at 5% Significance Level      |        |
| Lilliefors Test Statistic                                                                                                                 | 0.0937  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.121   | Detected Data appear Lognormal at 5% Significance Level      |        |
| Detected Data appear Lognormal at 5% Significance Level                                                                                   |         |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |         |                                                              |        |
| Mean in Original Scale                                                                                                                    | 0.999   | Mean in Log Scale                                            | -7.883 |
| SD in Original Scale                                                                                                                      | 8.318   | SD in Log Scale                                              | 4.599  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 1.405   | 95% Percentile Bootstrap UCL                                 | 1.424  |
| 95% BCA Bootstrap UCL                                                                                                                     | 1.525   | 95% Bootstrap t UCL                                          | 1.613  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A     |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |         |                                                              |        |
| KM Mean (logged)                                                                                                                          | -1.232  | KM Geo Mean                                                  | 0.292  |
| KM SD (logged)                                                                                                                            | 0.778   | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0235  | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            | 0.778   | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0235  |                                                              |        |
| DL/2 Statistics                                                                                                                           |         |                                                              |        |
| DL/2 Normal                                                                                                                               |         | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 1.407   | Mean in Log Scale                                            | -1.393 |
| SD in Original Scale                                                                                                                      | 8.32    | SD in Log Scale                                              | 1.265  |
| 95% t UCL (Assumes normality)                                                                                                             | 1.814   | 95% H-Stat UCL                                               | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |         |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |         |                                                              |        |
| Detected Data appear Lognormal Distributed at 5% Significance Level                                                                       |         |                                                              |        |
| Suggested UCL to Use                                                                                                                      |         |                                                              |        |
| KM H-UCL                                                                                                                                  | N/A     |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |         |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |         |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |         |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |         |                                                              |        |
| result (fluvial_tetrachloroethene_127-18-4)                                                                                               |         |                                                              |        |
| General Statistics                                                                                                                        |         |                                                              |        |
| Total Number of Observations                                                                                                              | 1137    | Number of Distinct Observations                              | 639    |
| Number of Detects                                                                                                                         | 830     | Number of Non-Detects                                        | 307    |
| Number of Distinct Detects                                                                                                                | 636     | Number of Distinct Non-Detects                               | 9      |
| Minimum Detect                                                                                                                            | 0.253   | Minimum Non-Detect                                           | 0.25   |
| Maximum Detect                                                                                                                            | 300     | Maximum Non-Detect                                           | 25     |
| Variance Detects                                                                                                                          | 2134    | Percent Non-Detects                                          | 27%    |
| Mean Detects                                                                                                                              | 28.85   | SD Detects                                                   | 46.2   |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                           |        |                                                              |       |
|---------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|-------|
| Median Detects                                                                                                            | 11.8   | CV Detects                                                   | 1.601 |
| Skewness Detects                                                                                                          | 3.002  | Kurtosis Detects                                             | 10.57 |
| Mean of Logged Detects                                                                                                    | 2.187  | SD of Logged Detects                                         | 1.767 |
| Normal GOF Test on Detects Only                                                                                           |        |                                                              |       |
| Shapiro Wilk Test Statistic                                                                                               | 0.621  | Normal GOF Test on Detected Observations Only                |       |
| 5% Shapiro Wilk P Value                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |       |
| Lilliefors Test Statistic                                                                                                 | 0.268  | Lilliefors GOF Test                                          |       |
| 5% Lilliefors Critical Value                                                                                              | 0.031  | Detected Data Not Normal at 5% Significance Level            |       |
| Detected Data Not Normal at 5% Significance Level                                                                         |        |                                                              |       |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |        |                                                              |       |
| KM Mean                                                                                                                   | 21.24  | KM Standard Error of Mean                                    | 1.228 |
| KM SD                                                                                                                     | 41.39  | 95% KM (BCA) UCL                                             | 23.39 |
| 95% KM (t) UCL                                                                                                            | 23.27  | 95% KM (Percentile Bootstrap) UCL                            | 23.3  |
| 95% KM (z) UCL                                                                                                            | 23.26  | 95% KM Bootstrap t UCL                                       | 23.6  |
| 90% KM Chebyshev UCL                                                                                                      | 24.93  | 95% KM Chebyshev UCL                                         | 26.6  |
| 97.5% KM Chebyshev UCL                                                                                                    | 28.91  | 99% KM Chebyshev UCL                                         | 33.46 |
| Gamma GOF Tests on Detected Observations Only                                                                             |        |                                                              |       |
| A-D Test Statistic                                                                                                        | 6.842  | Anderson-Darling GOF Test                                    |       |
| 5% A-D Critical Value                                                                                                     | 0.82   | Detected Data Not Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                        | 0.0639 | Kolmogorov-Smimov GOF                                        |       |
| 5% K-S Critical Value                                                                                                     | 0.0345 | Detected Data Not Gamma Distributed at 5% Significance Level |       |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                              |        |                                                              |       |
| Gamma Statistics on Detected Data Only                                                                                    |        |                                                              |       |
| k hat (MLE)                                                                                                               | 0.535  | k star (bias corrected MLE)                                  | 0.534 |
| Theta hat (MLE)                                                                                                           | 53.94  | Theta star (bias corrected MLE)                              | 54.05 |
| nu hat (MLE)                                                                                                              | 887.9  | nu star (bias corrected)                                     | 886   |
| Mean (detects)                                                                                                            | 28.85  |                                                              |       |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |        |                                                              |       |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |        |                                                              |       |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |        |                                                              |       |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |        |                                                              |       |
| This is especially true when the sample size is small.                                                                    |        |                                                              |       |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |        |                                                              |       |
| Minimum                                                                                                                   | 0.01   | Mean                                                         | 21.09 |
| Maximum                                                                                                                   | 300    | Median                                                       | 4.04  |
| SD                                                                                                                        | 41.48  | CV                                                           | 1.967 |
| k hat (MLE)                                                                                                               | 0.265  | k star (bias corrected MLE)                                  | 0.265 |
| Theta hat (MLE)                                                                                                           | 79.69  | Theta star (bias corrected MLE)                              | 79.72 |
| nu hat (MLE)                                                                                                              | 601.8  | nu star (bias corrected)                                     | 601.5 |
| Adjusted Level of Significance (β)                                                                                        | 0.0498 |                                                              |       |
| Approximate Chi Square Value (601.52, α)                                                                                  | 545.6  | Adjusted Chi Square Value (601.52, β)                        | 545.6 |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 23.25  | 95% Gamma Adjusted UCL (use when n<50)                       | 23.25 |
| Estimates of Gamma Parameters using KM Estimates                                                                          |        |                                                              |       |
| Mean (KM)                                                                                                                 | 21.24  | SD (KM)                                                      | 41.39 |
| Variance (KM)                                                                                                             | 1713   | SE of Mean (KM)                                              | 1.228 |
| k hat (KM)                                                                                                                | 0.263  | k star (KM)                                                  | 0.263 |
| nu hat (KM)                                                                                                               | 599.2  | nu star (KM)                                                 | 598.9 |
| theta hat (KM)                                                                                                            | 80.63  | theta star (KM)                                              | 80.66 |
| 80% gamma percentile (KM)                                                                                                 | 31.4   | 90% gamma percentile (KM)                                    | 63.51 |
| 95% gamma percentile (KM)                                                                                                 | 101.2  | 99% gamma percentile (KM)                                    | 200.9 |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |        |                                                              |       |
| Approximate Chi Square Value (598.92, α)                                                                                  | 543.2  | Adjusted Chi Square Value (598.92, β)                        | 543.1 |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 23.43  | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 23.43 |
| Lognormal GOF Test on Detected Observations Only                                                                          |        |                                                              |       |
| Shapiro Wilk Approximate Test Statistic                                                                                   | 0.944  | Shapiro Wilk GOF Test                                        |       |
| 5% Shapiro Wilk P Value                                                                                                   | 0      | Detected Data Not Lognormal at 5% Significance Level         |       |
| Lilliefors Test Statistic                                                                                                 | 0.0759 | Lilliefors GOF Test                                          |       |
| 5% Lilliefors Critical Value                                                                                              | 0.031  | Detected Data Not Lognormal at 5% Significance Level         |       |
| Detected Data Not Lognormal at 5% Significance Level                                                                      |        |                                                              |       |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                        |        |                                                              |       |
| Mean in Original Scale                                                                                                    | 21.25  | Mean in Log Scale                                            | 1.3   |
| SD in Original Scale                                                                                                      | 41.4   | SD in Log Scale                                              | 2.212 |
| 95% t UCL (assumes normality of ROS data)                                                                                 | 23.27  | 95% Percentile Bootstrap UCL                                 | 23.31 |
| 95% BCA Bootstrap UCL                                                                                                     | 23.38  | 95% Bootstrap t UCL                                          | 23.46 |
| 95% H-UCL (Log ROS)                                                                                                       | N/A    |                                                              |       |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                          |        |                                                              |       |
| KM Mean (logged)                                                                                                          | 1.359  | KM Geo Mean                                                  | 3.893 |
| KM SD (logged)                                                                                                            | 2.074  | 95% Critical H Value (KM-Log)                                | N/A   |
| KM Standard Error of Mean (logged)                                                                                        | 0.0628 | 95% H-UCL (KM -Log)                                          | N/A   |
| KM SD (logged)                                                                                                            | 2.074  | 95% Critical H Value (KM-Log)                                | N/A   |
| KM Standard Error of Mean (logged)                                                                                        | 0.0628 |                                                              |       |
| DL/2 Statistics                                                                                                           |        |                                                              |       |
| DL/2 Normal                                                                                                               |        | DL/2 Log-Transformed                                         |       |
| Mean in Original Scale                                                                                                    | 21.42  | Mean in Log Scale                                            | 1.487 |
| SD in Original Scale                                                                                                      | 41.32  | SD in Log Scale                                              | 2.009 |
| 95% t UCL (Assumes normality)                                                                                             | 23.43  | 95% H-Stat UCL                                               | N/A   |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                         |        |                                                              |       |
| Nonparametric Distribution Free UCL Statistics                                                                            |        |                                                              |       |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                    |        |                                                              |       |



TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |         |                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------|--------|
| Suggested UCL to Use                                                                                                                      |         |                                                                 |        |
| 95% KM (Chebyshev) UCL                                                                                                                    |         | 26.6                                                            |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |         |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |         |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |         |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |         |                                                                 |        |
| result (fluvial_toluene_108-88-3)                                                                                                         |         |                                                                 |        |
| General Statistics                                                                                                                        |         |                                                                 |        |
| Total Number of Observations                                                                                                              | 1137    | Number of Distinct Observations                                 | 82     |
| Number of Detects                                                                                                                         | 77      | Number of Non-Detects                                           | 1060   |
| Number of Distinct Detects                                                                                                                | 73      | Number of Distinct Non-Detects                                  | 9      |
| Minimum Detect                                                                                                                            | 0.255   | Minimum Non-Detect                                              | 0.25   |
| Maximum Detect                                                                                                                            | 149     | Maximum Non-Detect                                              | 25     |
| Variance Detects                                                                                                                          | 323.2   | Percent Non-Detects                                             | 93.23% |
| Mean Detects                                                                                                                              | 8.342   | SD Detects                                                      | 17.98  |
| Median Detects                                                                                                                            | 3.5     | CV Detects                                                      | 2.155  |
| Skewness Detects                                                                                                                          | 6.587   | Kurtosis Detects                                                | 50.49  |
| Mean of Logged Detects                                                                                                                    | 1.194   | SD of Logged Detects                                            | 1.405  |
| Normal GOF Test on Detects Only                                                                                                           |         |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.413   | Normal GOF Test on Detected Observations Only                   |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0       | Detected Data Not Normal at 5% Significance Level               |        |
| Lilliefors Test Statistic                                                                                                                 | 0.326   | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.101   | Detected Data Not Normal at 5% Significance Level               |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |         |                                                                 |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |         |                                                                 |        |
| KM Mean                                                                                                                                   | 0.808   | KM Standard Error of Mean                                       | 0.152  |
| KM SD                                                                                                                                     | 5.076   | 95% KM (BCA) UCL                                                | 1.09   |
| 95% KM (t) UCL                                                                                                                            | 1.057   | 95% KM (Percentile Bootstrap) UCL                               | 1.078  |
| 95% KM (z) UCL                                                                                                                            | 1.057   | 95% KM Bootstrap t UCL                                          | 1.306  |
| 90% KM Chebyshev UCL                                                                                                                      | 1.263   | 95% KM Chebyshev UCL                                            | 1.469  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 1.755   | 99% KM Chebyshev UCL                                            | 2.316  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |         |                                                                 |        |
| A-D Test Statistic                                                                                                                        | 1.228   | Anderson-Darling GOF Test                                       |        |
| 5% A-D Critical Value                                                                                                                     | 0.802   | Detected Data Not Gamma Distributed at 5% Significance Level    |        |
| K-S Test Statistic                                                                                                                        | 0.0966  | Kolmogorov-Smirnov GOF                                          |        |
| 5% K-S Critical Value                                                                                                                     | 0.106   | Detected data appear Gamma Distributed at 5% Significance Level |        |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                    |         |                                                                 |        |
| Gamma Statistics on Detected Data Only                                                                                                    |         |                                                                 |        |
| k hat (MLE)                                                                                                                               | 0.657   | k star (bias corrected MLE)                                     | 0.64   |
| Theta hat (MLE)                                                                                                                           | 12.69   | Theta star (bias corrected MLE)                                 | 13.03  |
| nu hat (MLE)                                                                                                                              | 101.2   | nu star (bias corrected)                                        | 98.63  |
| Mean (detects)                                                                                                                            | 8.342   |                                                                 |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |         |                                                                 |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |         |                                                                 |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |         |                                                                 |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |         |                                                                 |        |
| This is especially true when the sample size is small.                                                                                    |         |                                                                 |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |         |                                                                 |        |
| Minimum                                                                                                                                   | 0.01    | Mean                                                            | 0.574  |
| Maximum                                                                                                                                   | 149     | Median                                                          | 0.01   |
| SD                                                                                                                                        | 5.1     | CV                                                              | 8.881  |
| k hat (MLE)                                                                                                                               | 0.201   | k star (bias corrected MLE)                                     | 0.201  |
| Theta hat (MLE)                                                                                                                           | 2.857   | Theta star (bias corrected MLE)                                 | 2.856  |
| nu hat (MLE)                                                                                                                              | 457.1   | nu star (bias corrected)                                        | 457.3  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498  |                                                                 |        |
| Approximate Chi Square Value (457.27, α)                                                                                                  | 408.7   | Adjusted Chi Square Value (457.27, β)                           | 408.6  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.643   | 95% Gamma Adjusted UCL (use when n<50)                          | 0.643  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |         |                                                                 |        |
| Mean (KM)                                                                                                                                 | 0.808   | SD (KM)                                                         | 5.076  |
| Variance (KM)                                                                                                                             | 25.76   | SE of Mean (KM)                                                 | 0.152  |
| k hat (KM)                                                                                                                                | 0.0253  | k star (KM)                                                     | 0.0258 |
| nu hat (KM)                                                                                                                               | 57.59   | nu star (KM)                                                    | 58.77  |
| theta hat (KM)                                                                                                                            | 31.9    | theta star (KM)                                                 | 31.25  |
| 80% gamma percentile (KM)                                                                                                                 | 0.00319 | 90% gamma percentile (KM)                                       | 0.307  |
| 95% gamma percentile (KM)                                                                                                                 | 2.672   | 99% gamma percentile (KM)                                       | 21.62  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |         |                                                                 |        |
| Approximate Chi Square Value (58.77, α)                                                                                                   | 42.14   | Adjusted Chi Square Value (58.77, β)                            | 42.12  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 1.126   | 95% Gamma Adjusted KM-UCL (use when n<50)                       | 1.127  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |         |                                                                 |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.964   | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0.0973  | Detected Data appear Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.105   | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.101   | Detected Data Not Lognormal at 5% Significance Level            |        |
| Detected Data appear Approximate Lognormal at 5% Significance Level                                                                       |         |                                                                 |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |         |                                                                 |        |
| Mean in Original Scale                                                                                                                    | 0.611   | Mean in Log Scale                                               | -5.22  |
| SD in Original Scale                                                                                                                      | 5.097   | SD in Log Scale                                                 | 3.308  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 0.86    | 95% Percentile Bootstrap UCL                                    | 0.892  |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |                                            |                                                              |                                        |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------|----------------------------------------|--------|
|                                                                                                                                           | 95% BCA Bootstrap UCL                      | 0.993                                                        | 95% Bootstrap t UCL                    | 1.103  |
|                                                                                                                                           | 95% H-UCL (Log ROS)                        | N/A                                                          |                                        |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |                                            |                                                              |                                        |        |
|                                                                                                                                           | KM Mean (logged)                           | -1.201                                                       | KM Geo Mean                            | 0.301  |
|                                                                                                                                           | KM SD (logged)                             | 0.754                                                        | 95% Critical H Value (KM-Log)          | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.023                                      |                                                              | 95% H-UCL (KM -Log)                    | N/A    |
|                                                                                                                                           | KM SD (logged)                             | 0.754                                                        | 95% Critical H Value (KM-Log)          | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.023                                      |                                                              |                                        |        |
| DL/2 Statistics                                                                                                                           |                                            |                                                              |                                        |        |
| DL/2 Normal                                                                                                                               |                                            | DL/2 Log-Transformed                                         |                                        |        |
|                                                                                                                                           | Mean in Original Scale                     | 1.047                                                        | Mean in Log Scale                      | -1.292 |
|                                                                                                                                           | SD in Original Scale                       | 5.145                                                        | SD in Log Scale                        | 1.279  |
|                                                                                                                                           | 95% t UCL (Assumes normality)              | 1.299                                                        | 95% H-Stat UCL                         | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |                                            |                                                              |                                        |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |                                            |                                                              |                                        |        |
| Detected Data appear Approximate Gamma Distributed at 5% Significance Level                                                               |                                            |                                                              |                                        |        |
| Suggested UCL to Use                                                                                                                      |                                            |                                                              |                                        |        |
| 95% KM Approximate Gamma UCL                                                                                                              | 1.126                                      |                                                              |                                        |        |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |                                            |                                                              |                                        |        |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |                                            |                                                              |                                        |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |                                            |                                                              |                                        |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |                                            |                                                              |                                        |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |                                            |                                                              |                                        |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |                                            |                                                              |                                        |        |
| result (fluvial_trichloroethene_79-01-6)                                                                                                  |                                            |                                                              |                                        |        |
| General Statistics                                                                                                                        |                                            |                                                              |                                        |        |
| Total Number of Observations                                                                                                              | 1137                                       | Number of Distinct Observations                              | 632                                    |        |
| Number of Detects                                                                                                                         | 797                                        | Number of Non-Detects                                        | 340                                    |        |
| Number of Distinct Detects                                                                                                                | 628                                        | Number of Distinct Non-Detects                               | 9                                      |        |
| Minimum Detect                                                                                                                            | 0.257                                      | Minimum Non-Detect                                           | 0.25                                   |        |
| Maximum Detect                                                                                                                            | 286                                        | Maximum Non-Detect                                           | 25                                     |        |
| Variance Detects                                                                                                                          | 660.5                                      | Percent Non-Detects                                          | 29.9%                                  |        |
| Mean Detects                                                                                                                              | 14.92                                      | SD Detects                                                   | 25.7                                   |        |
| Median Detects                                                                                                                            | 5.26                                       | CV Detects                                                   | 1.722                                  |        |
| Skewness Detects                                                                                                                          | 4.226                                      | Kurtosis Detects                                             | 27.22                                  |        |
| Mean of Logged Detects                                                                                                                    | 1.648                                      | SD of Logged Detects                                         | 1.528                                  |        |
| Normal GOF Test on Detects Only                                                                                                           |                                            |                                                              |                                        |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.585                                      | Normal GOF Test on Detected Observations Only                |                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0                                          | Detected Data Not Normal at 5% Significance Level            |                                        |        |
| Lilliefors Test Statistic                                                                                                                 | 0.284                                      | Lilliefors GOF Test                                          |                                        |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0317                                     | Detected Data Not Normal at 5% Significance Level            |                                        |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |                                            |                                                              |                                        |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |                                            |                                                              |                                        |        |
|                                                                                                                                           | KM Mean                                    | 10.69                                                        | KM Standard Error of Mean              | 0.667  |
|                                                                                                                                           | KM SD                                      | 22.47                                                        | 95% KM (BCA) UCL                       | 11.77  |
|                                                                                                                                           | 95% KM (t) UCL                             | 11.79                                                        | 95% KM (Percentile Bootstrap) UCL      | 11.86  |
|                                                                                                                                           | 95% KM (z) UCL                             | 11.79                                                        | 95% KM Bootstrap t UCL                 | 11.94  |
|                                                                                                                                           | 90% KM Chebyshev UCL                       | 12.69                                                        | 95% KM Chebyshev UCL                   | 13.6   |
|                                                                                                                                           | 97.5% KM Chebyshev UCL                     | 14.86                                                        | 99% KM Chebyshev UCL                   | 17.33  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |                                            |                                                              |                                        |        |
| A-D Test Statistic                                                                                                                        | 16.18                                      | Anderson-Darling GOF Test                                    |                                        |        |
| 5% A-D Critical Value                                                                                                                     | 0.814                                      | Detected Data Not Gamma Distributed at 5% Significance Level |                                        |        |
| K-S Test Statistic                                                                                                                        | 0.106                                      | Kolmogorov-Smirnov GOF                                       |                                        |        |
| 5% K-S Critical Value                                                                                                                     | 0.0352                                     | Detected Data Not Gamma Distributed at 5% Significance Level |                                        |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |                                            |                                                              |                                        |        |
| Gamma Statistics on Detected Data Only                                                                                                    |                                            |                                                              |                                        |        |
|                                                                                                                                           | k hat (MLE)                                | 0.587                                                        | k star (bias corrected MLE)            | 0.586  |
|                                                                                                                                           | Theta hat (MLE)                            | 25.4                                                         | Theta star (bias corrected MLE)        | 25.46  |
|                                                                                                                                           | nu hat (MLE)                               | 936.4                                                        | nu star (bias corrected)               | 934.2  |
|                                                                                                                                           | Mean (detects)                             | 14.92                                                        |                                        |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |                                            |                                                              |                                        |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |                                            |                                                              |                                        |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |                                            |                                                              |                                        |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |                                            |                                                              |                                        |        |
| This is especially true when the sample size is small.                                                                                    |                                            |                                                              |                                        |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |                                            |                                                              |                                        |        |
|                                                                                                                                           | Minimum                                    | 0.01                                                         | Mean                                   | 10.53  |
|                                                                                                                                           | Maximum                                    | 286                                                          | Median                                 | 2.16   |
|                                                                                                                                           | SD                                         | 22.55                                                        | CV                                     | 2.142  |
|                                                                                                                                           | k hat (MLE)                                | 0.28                                                         | k star (bias corrected MLE)            | 0.28   |
|                                                                                                                                           | Theta hat (MLE)                            | 37.55                                                        | Theta star (bias corrected MLE)        | 37.57  |
|                                                                                                                                           | nu hat (MLE)                               | 637.7                                                        | nu star (bias corrected)               | 637.4  |
|                                                                                                                                           | Adjusted Level of Significance (β)         | 0.0498                                                       |                                        |        |
|                                                                                                                                           | Approximate Chi Square Value (637.36, α)   | 579.8                                                        | Adjusted Chi Square Value (637.36, β)  | 579.7  |
|                                                                                                                                           | 95% Gamma Approximate UCL (use when n>=50) | 11.57                                                        | 95% Gamma Adjusted UCL (use when n<50) | 11.58  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |                                            |                                                              |                                        |        |
|                                                                                                                                           | Mean (KM)                                  | 10.69                                                        | SD (KM)                                | 22.47  |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |           |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|--------|
| Variance (KM)                                                                                                                             | 504.8     | SE of Mean (KM)                                              | 0.667  |
| k hat (KM)                                                                                                                                | 0.226     | k star (KM)                                                  | 0.226  |
| nu hat (KM)                                                                                                                               | 515.1     | nu star (KM)                                                 | 515    |
| theta hat (KM)                                                                                                                            | 47.21     | theta star (KM)                                              | 47.21  |
| 80% gamma percentile (KM)                                                                                                                 | 14.94     | 90% gamma percentile (KM)                                    | 32.27  |
| 95% gamma percentile (KM)                                                                                                                 | 53.26     | 99% gamma percentile (KM)                                    | 109.9  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                              |        |
| Approximate Chi Square Value (515.03, α)                                                                                                  | 463.4     | Adjusted Chi Square Value (515.03, β)                        | 463.3  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 11.88     | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 11.89  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.965     | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.110E-16 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.0453    | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0317    | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                              |        |
| Mean in Original Scale                                                                                                                    | 10.68     | Mean in Log Scale                                            | 0.838  |
| SD in Original Scale                                                                                                                      | 22.48     | SD in Log Scale                                              | 1.914  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 11.77     | 95% Percentile Bootstrap UCL                                 | 11.85  |
| 95% BCA Bootstrap UCL                                                                                                                     | 11.78     | 95% Bootstrap t UCL                                          | 11.82  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A       |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                              |        |
| KM Mean (logged)                                                                                                                          | 0.936     | KM Geo Mean                                                  | 2.549  |
| KM SD (logged)                                                                                                                            | 1.745     | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0535    | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            | 1.745     | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0535    |                                                              |        |
| DL/2 Statistics                                                                                                                           |           |                                                              |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 10.84     | Mean in Log Scale                                            | 1.038  |
| SD in Original Scale                                                                                                                      | 22.42     | SD in Log Scale                                              | 1.716  |
| 95% t UCL (Assumes normality)                                                                                                             | 11.93     | 95% H-Stat UCL                                               | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                              |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                              |        |
| Suggested UCL to Use                                                                                                                      |           |                                                              |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 13.6      |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                              |        |
| result (fluvial_vinyl chloride_75-01-4)                                                                                                   |           |                                                              |        |
| General Statistics                                                                                                                        |           |                                                              |        |
| Total Number of Observations                                                                                                              | 1137      | Number of Distinct Observations                              | 145    |
| Number of Detects                                                                                                                         | 147       | Number of Non-Detects                                        | 990    |
| Number of Distinct Detects                                                                                                                | 138       | Number of Distinct Non-Detects                               | 9      |
| Minimum Detect                                                                                                                            | 0.253     | Minimum Non-Detect                                           | 0.25   |
| Maximum Detect                                                                                                                            | 188       | Maximum Non-Detect                                           | 25     |
| Variance Detects                                                                                                                          | 1793      | Percent Non-Detects                                          | 87.07% |
| Mean Detects                                                                                                                              | 17.65     | SD Detects                                                   | 42.34  |
| Median Detects                                                                                                                            | 1.81      | CV Detects                                                   | 2.399  |
| Skewness Detects                                                                                                                          | 2.977     | Kurtosis Detects                                             | 7.8    |
| Mean of Logged Detects                                                                                                                    | 1.043     | SD of Logged Detects                                         | 1.764  |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.45      | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0         | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.372     | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0735    | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |           |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |           |                                                              |        |
| KM Mean                                                                                                                                   | 2.52      | KM Standard Error of Mean                                    | 0.484  |
| KM SD                                                                                                                                     | 16.25     | 95% KM (BCA) UCL                                             | 3.377  |
| 95% KM (t) UCL                                                                                                                            | 3.316     | 95% KM (Percentile Bootstrap) UCL                            | 3.349  |
| 95% KM (z) UCL                                                                                                                            | 3.316     | 95% KM Bootstrap t UCL                                       | 3.549  |
| 90% KM Chebyshev UCL                                                                                                                      | 3.971     | 95% KM Chebyshev UCL                                         | 4.629  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 5.541     | 99% KM Chebyshev UCL                                         | 7.333  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |           |                                                              |        |
| A-D Test Statistic                                                                                                                        | 14.01     | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.852     | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.238     | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.0832    | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |           |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |           |                                                              |        |
| k hat (MLE)                                                                                                                               | 0.365     | k star (bias corrected MLE)                                  | 0.362  |
| Theta hat (MLE)                                                                                                                           | 48.3      | Theta star (bias corrected MLE)                              | 48.69  |
| nu hat (MLE)                                                                                                                              | 107.4     | nu star (bias corrected)                                     | 106.6  |
| Mean (detects)                                                                                                                            | 17.65     |                                                              |        |

TABLE B.1  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |           |                                                      |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------|--------|
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |           |                                                      |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |           |                                                      |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |           |                                                      |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |           |                                                      |        |
| This is especially true when the sample size is small.                                                                                    |           |                                                      |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |           |                                                      |        |
| Minimum                                                                                                                                   | 0.01      | Mean                                                 | 2.312  |
| Maximum                                                                                                                                   | 188       | Median                                               | 0.01   |
| SD                                                                                                                                        | 16.29     | CV                                                   | 7.049  |
| k hat (MLE)                                                                                                                               | 0.162     | k star (bias corrected MLE)                          | 0.162  |
| Theta hat (MLE)                                                                                                                           | 14.26     | Theta star (bias corrected MLE)                      | 14.24  |
| nu hat (MLE)                                                                                                                              | 368.7     | nu star (bias corrected)                             | 369    |
| Adjusted Level of Significance (β)                                                                                                        | 0.0498    |                                                      |        |
| Approximate Chi Square Value (369.01, α)                                                                                                  | 325.5     | Adjusted Chi Square Value (369.01, β)                | 325.4  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 2.621     | 95% Gamma Adjusted UCL (use when n<50)               | 2.621  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |           |                                                      |        |
| Mean (KM)                                                                                                                                 | 2.52      | SD (KM)                                              | 16.25  |
| Variance (KM)                                                                                                                             | 264.2     | SE of Mean (KM)                                      | 0.484  |
| k hat (KM)                                                                                                                                | 0.024     | k star (KM)                                          | 0.0246 |
| nu hat (KM)                                                                                                                               | 54.65     | nu star (KM)                                         | 55.84  |
| theta hat (KM)                                                                                                                            | 104.8     | theta star (KM)                                      | 102.6  |
| 80% gamma percentile (KM)                                                                                                                 | 0.00665   | 90% gamma percentile (KM)                            | 0.811  |
| 95% gamma percentile (KM)                                                                                                                 | 7.831     | 99% gamma percentile (KM)                            | 68.17  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                      |        |
| Approximate Chi Square Value (55.84, α)                                                                                                   | 39.67     | Adjusted Chi Square Value (55.84, β)                 | 39.65  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 3.547     | 95% Gamma Adjusted KM-UCL (use when n<50)            | 3.549  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                      |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.896     | Shapiro Wilk GOF Test                                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.887E-15 | Detected Data Not Lognormal at 5% Significance Level |        |
| Lilliefors Test Statistic                                                                                                                 | 0.13      | Lilliefors GOF Test                                  |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0735    | Detected Data Not Lognormal at 5% Significance Level |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                      |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                      |        |
| Mean in Original Scale                                                                                                                    | 2.324     | Mean in Log Scale                                    | -5.113 |
| SD in Original Scale                                                                                                                      | 16.29     | SD in Log Scale                                      | 3.819  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 3.119     | 95% Percentile Bootstrap UCL                         | 3.106  |
| 95% BCA Bootstrap UCL                                                                                                                     | 3.313     | 95% Bootstrap t UCL                                  | 3.345  |
| 95% H-UCL (Log ROS)                                                                                                                       | N/A       |                                                      |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                      |        |
| KM Mean (logged)                                                                                                                          | -1.044    | KM Geo Mean                                          | 0.352  |
| KM SD (logged)                                                                                                                            | 1.045     | 95% Critical H Value (KM-Log)                        | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0319    | 95% H-UCL (KM -Log)                                  | N/A    |
| KM SD (logged)                                                                                                                            | 1.045     | 95% Critical H Value (KM-Log)                        | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0319    |                                                      |        |
| DL/2 Statistics                                                                                                                           |           |                                                      |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                 |        |
| Mean in Original Scale                                                                                                                    | 2.762     | Mean in Log Scale                                    | -1.098 |
| SD in Original Scale                                                                                                                      | 16.26     | SD in Log Scale                                      | 1.456  |
| 95% t UCL (Assumes normality)                                                                                                             | 3.556     | 95% H-Stat UCL                                       | N/A    |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                      |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                      |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                      |        |
| Suggested UCL to Use                                                                                                                      |           |                                                      |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 4.629     |                                                      |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                      |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                      |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                      |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                      |        |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| UCL Statistics for Data Sets with Non-Detects |                                |  |  |
|-----------------------------------------------|--------------------------------|--|--|
| User Selected Options                         |                                |  |  |
| Date/Time of Computation                      | ProUCL 5.18/16/2017 8:09:34 AM |  |  |
| From File                                     | WorkSheet.xls                  |  |  |
| Full Precision                                | OFF                            |  |  |
| Confidence Coefficient                        | 95%                            |  |  |
| Number of Bootstrap Operations                | 2000                           |  |  |

result (I/uc\_1,1,2,2-tetrachloroethane\_79-34-5)

| General Statistics           |         |                                 |        |
|------------------------------|---------|---------------------------------|--------|
| Total Number of Observations | 244     | Number of Distinct Observations | 18     |
| Number of Detects            | 13      | Number of Non-Detects           | 231    |
| Number of Distinct Detects   | 13      | Number of Distinct Non-Detects  | 5      |
| Minimum Detect               | 0.202   | Minimum Non-Detect              | 0.2    |
| Maximum Detect               | 0.538   | Maximum Non-Detect              | 4      |
| Variance Detects             | 0.00777 | Percent Non-Detects             | 94.67% |
| Mean Detects                 | 0.281   | SD Detects                      | 0.0881 |
| Median Detects               | 0.256   | CV Detects                      | 0.314  |
| Skewness Detects             | 2.251   | Kurtosis Detects                | 6.3    |
| Mean of Logged Detects       | -1.305  | SD of Logged Detects            | 0.263  |

| Normal GOF Test on Detects Only |       |
|---------------------------------|-------|
| Shapiro Wilk Test Statistic     | 0.761 |
| 5% Shapiro Wilk Critical Value  | 0.866 |
| Lilliefors Test Statistic       | 0.228 |
| 5% Lilliefors Critical Value    | 0.234 |

Detected Data appear Approximate Normal at 5% Significance Level

| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs |        |
|----------------------------------------------------------------------------------------|--------|
| KM Mean                                                                                | 0.205  |
| KM SD                                                                                  | 0.0273 |
| 95% KM (t) UCL                                                                         | 0.208  |
| 95% KM (z) UCL                                                                         | 0.208  |
| 90% KM Chebyshev UCL                                                                   | 0.21   |
| 97.5% KM Chebyshev UCL                                                                 | 0.216  |

| Gamma GOF Tests on Detected Observations Only |       |
|-----------------------------------------------|-------|
| A-D Test Statistic                            | 0.636 |
| 5% A-D Critical Value                         | 0.734 |
| K-S Test Statistic                            | 0.177 |
| 5% K-S Critical Value                         | 0.236 |

Detected data appear Gamma Distributed at 5% Significance Level

| Gamma Statistics on Detected Data Only |        |
|----------------------------------------|--------|
| k hat (MLE)                            | 14.21  |
| Theta hat (MLE)                        | 0.0198 |
| nu hat (MLE)                           | 369.4  |
| Mean (detects)                         | 0.281  |

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

|                                            |        |                                        |        |
|--------------------------------------------|--------|----------------------------------------|--------|
| Minimum                                    | 0.01   | Mean                                   | 0.0362 |
| Maximum                                    | 0.538  | Median                                 | 0.01   |
| SD                                         | 0.0694 | CV                                     | 1.915  |
| k hat (MLE)                                | 0.751  | k star (bias corrected MLE)            | 0.745  |
| Theta hat (MLE)                            | 0.0482 | Theta star (bias corrected MLE)        | 0.0487 |
| nu hat (MLE)                               | 366.6  | nu star (bias corrected)               | 363.4  |
| Adjusted Level of Significance (β)         | 0.049  |                                        |        |
| Approximate Chi Square Value (363.39, α)   | 320.2  | Adjusted Chi Square Value (363.39, β)  | 320    |
| 95% Gamma Approximate UCL (use when n>=50) | 0.0411 | 95% Gamma Adjusted UCL (use when n<50) | 0.0411 |

Estimates of Gamma Parameters using KM Estimates

|                           |           |                           |         |
|---------------------------|-----------|---------------------------|---------|
| Mean (KM)                 | 0.205     | SD (KM)                   | 0.0273  |
| Variance (KM)             | 7.4561E-4 |                           | 0.00186 |
| k hat (KM)                | 56.13     | k star (KM)               | 55.44   |
| nu hat (KM)               | 27392     | nu star (KM)              | 27057   |
| theta hat (KM)            | 0.00364   | theta star (KM)           | 0.00369 |
| 80% gamma percentile (KM) | 0.227     | 90% gamma percentile (KM) | 0.24    |
| 95% gamma percentile (KM) | 0.252     | 99% gamma percentile (KM) | 0.274   |

Gamma Kaplan-Meier (KM) Statistics

|                                               |       |                                           |       |
|-----------------------------------------------|-------|-------------------------------------------|-------|
| Approximate Chi Square Value (N/A, α)         | 26675 | Adjusted Chi Square Value (N/A, β)        | 26673 |
| 95% Gamma Approximate KM-UCL (use when n>=50) | 0.208 | 95% Gamma Adjusted KM-UCL (use when n<50) | 0.208 |

| Lognormal GOF Test on Detected Observations Only |       |
|--------------------------------------------------|-------|
| Shapiro Wilk Test Statistic                      | 0.877 |
| 5% Shapiro Wilk Critical Value                   | 0.866 |
| Lilliefors Test Statistic                        | 0.165 |
| 5% Lilliefors Critical Value                     | 0.234 |

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

|                                           |        |                              |        |
|-------------------------------------------|--------|------------------------------|--------|
| Mean in Original Scale                    | 0.0807 | Mean in Log Scale            | -2.774 |
| SD in Original Scale                      | 0.0655 | SD in Log Scale              | 0.716  |
| 95% t UCL (assumes normality of ROS data) | 0.0876 | 95% Percentile Bootstrap UCL | 0.0877 |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
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|                                                                                                                                           |           |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|--------|
| 95% BCA Bootstrap UCL                                                                                                                     | 0.0879    | 95% Bootstrap t UCL                                          | 0.0882 |
| 95% H-UCL (Log ROS)                                                                                                                       | 0.0882    |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                              |        |
| KM Mean (logged)                                                                                                                          | -1.592    | KM Geo Mean                                                  | 0.203  |
| KM SD (logged)                                                                                                                            | 0.0922    | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.00631   | 95% H-UCL (KM -Log)                                          | N/A    |
| KM SD (logged)                                                                                                                            | 0.0922    | 95% Critical H Value (KM-Log)                                | N/A    |
| KM Standard Error of Mean (logged)                                                                                                        | 0.00631   |                                                              |        |
| DL/2 Statistics                                                                                                                           |           |                                                              |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 0.145     | Mean in Log Scale                                            | -2.143 |
| SD in Original Scale                                                                                                                      | 0.184     | SD in Log Scale                                              | 0.479  |
| 95% t UCL (Assumes normality)                                                                                                             | 0.164     | 95% H-Stat UCL                                               | 0.139  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                              |        |
| Detected Data appear Approximate Normal Distributed at 5% Significance Level                                                              |           |                                                              |        |
| Suggested UCL to Use                                                                                                                      |           |                                                              |        |
| 95% KM (t) UCL                                                                                                                            | 0.208     |                                                              |        |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |           |                                                              |        |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |           |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                              |        |
| result (l/uc_carbon tetrachloride_56-23-5)                                                                                                |           |                                                              |        |
| General Statistics                                                                                                                        |           |                                                              |        |
| Total Number of Observations                                                                                                              | 244       | Number of Distinct Observations                              | 74     |
| Number of Detects                                                                                                                         | 75        | Number of Non-Detects                                        | 169    |
| Number of Distinct Detects                                                                                                                | 70        | Number of Distinct Non-Detects                               | 5      |
| Minimum Detect                                                                                                                            | 0.251     | Minimum Non-Detect                                           | 0.25   |
| Maximum Detect                                                                                                                            | 1.19      | Maximum Non-Detect                                           | 5      |
| Variance Detects                                                                                                                          | 0.0763    | Percent Non-Detects                                          | 69.26% |
| Mean Detects                                                                                                                              | 0.598     | SD Detects                                                   | 0.276  |
| Median Detects                                                                                                                            | 0.501     | CV Detects                                                   | 0.462  |
| Skewness Detects                                                                                                                          | 0.546     | Kurtosis Detects                                             | -1.156 |
| Mean of Logged Detects                                                                                                                    | -0.62     | SD of Logged Detects                                         | 0.463  |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.874     | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.7860E-8 | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.159     | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.102     | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |           |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |           |                                                              |        |
| KM Mean                                                                                                                                   | 0.362     | KM Standard Error of Mean                                    | 0.0148 |
| KM SD                                                                                                                                     | 0.225     | 95% KM (BCA) UCL                                             | 0.388  |
| 95% KM (t) UCL                                                                                                                            | 0.387     | 95% KM (Percentile Bootstrap) UCL                            | 0.387  |
| 95% KM (z) UCL                                                                                                                            | 0.386     | 95% KM Bootstrap t UCL                                       | 0.391  |
| 90% KM Chebyshev UCL                                                                                                                      | 0.406     | 95% KM Chebyshev UCL                                         | 0.427  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 0.455     | 99% KM Chebyshev UCL                                         | 0.509  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |           |                                                              |        |
| A-D Test Statistic                                                                                                                        | 2.114     | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.754     | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.125     | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.103     | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |           |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |           |                                                              |        |
| k hat (MLE)                                                                                                                               | 4.909     | k star (bias corrected MLE)                                  | 4.721  |
| Theta hat (MLE)                                                                                                                           | 0.122     | Theta star (bias corrected MLE)                              | 0.127  |
| nu hat (MLE)                                                                                                                              | 736.3     | nu star (bias corrected)                                     | 708.2  |
| Mean (detects)                                                                                                                            | 0.598     |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |           |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |           |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |           |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |           |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |           |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |           |                                                              |        |
| Minimum                                                                                                                                   | 0.01      | Mean                                                         | 0.238  |
| Maximum                                                                                                                                   | 1.19      | Median                                                       | 0.121  |
| SD                                                                                                                                        | 0.296     | CV                                                           | 1.247  |
| k hat (MLE)                                                                                                                               | 0.55      | k star (bias corrected MLE)                                  | 0.546  |
| Theta hat (MLE)                                                                                                                           | 0.432     | Theta star (bias corrected MLE)                              | 0.435  |
| nu hat (MLE)                                                                                                                              | 268.6     | nu star (bias corrected)                                     | 266.6  |
| Adjusted Level of Significance (β)                                                                                                        | 0.049     |                                                              |        |
| Approximate Chi Square Value (266.59, α)                                                                                                  | 229.8     | Adjusted Chi Square Value (266.59, β)                        | 229.6  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.276     | 95% Gamma Adjusted UCL (use when n<50)                       | 0.276  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |           |                                                              |        |



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|                                                                                                                                           |           |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|--------|
| Mean (KM)                                                                                                                                 | 0.362     | SD (KM)                                                      | 0.225  |
| Variance (KM)                                                                                                                             | 0.0505    | SE of Mean (KM)                                              | 0.0148 |
| k hat (KM)                                                                                                                                | 2.594     | k star (KM)                                                  | 2.565  |
| nu hat (KM)                                                                                                                               | 1266      | nu star (KM)                                                 | 1252   |
| theta hat (KM)                                                                                                                            | 0.14      | theta star (KM)                                              | 0.141  |
| 80% gamma percentile (KM)                                                                                                                 | 0.526     | 90% gamma percentile (KM)                                    | 0.665  |
| 95% gamma percentile (KM)                                                                                                                 | 0.795     | 99% gamma percentile (KM)                                    | 1.081  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                              |        |
| Approximate Chi Square Value (N/A, $\alpha$ )                                                                                             | 1171      | Adjusted Chi Square Value (N/A, $\beta$ )                    | 1170   |
| 95% Gamma Approximate KM-UCL (use when $n \geq 50$ )                                                                                      | 0.387     | 95% Gamma Adjusted KM-UCL (use when $n < 50$ )               | 0.387  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.911     | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 1.5200E-5 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.121     | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.102     | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                              |        |
| Mean in Original Scale                                                                                                                    | 0.294     | Mean in Log Scale                                            | -1.566 |
| SD in Original Scale                                                                                                                      | 0.262     | SD in Log Scale                                              | 0.836  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 0.322     | 95% Percentile Bootstrap UCL                                 | 0.322  |
| 95% BCA Bootstrap UCL                                                                                                                     | 0.322     | 95% Bootstrap t UCL                                          | 0.324  |
| 95% H-UCL (Log ROS)                                                                                                                       | 0.33      |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                              |        |
| KM Mean (logged)                                                                                                                          | -1.139    | KM Geo Mean                                                  | 0.32   |
| KM SD (logged)                                                                                                                            | 0.443     | 95% Critical H Value (KM-Log)                                | 1.78   |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0292    | 95% H-UCL (KM -Log)                                          | 0.371  |
| KM SD (logged)                                                                                                                            | 0.443     | 95% Critical H Value (KM-Log)                                | 1.78   |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0292    |                                                              |        |
| DL/2 Statistics                                                                                                                           |           |                                                              |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 0.313     | Mean in Log Scale                                            | -1.535 |
| SD in Original Scale                                                                                                                      | 0.332     | SD in Log Scale                                              | 0.79   |
| 95% t UCL (Assumes normality)                                                                                                             | 0.348     | 95% H-Stat UCL                                               | 0.326  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                              |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                              |        |
| Suggested UCL to Use                                                                                                                      |           |                                                              |        |
| 95% KM (t) UCL                                                                                                                            | 0.387     | KM H-UCL                                                     | 0.371  |
| 95% KM (BCA) UCL                                                                                                                          | 0.388     |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                              |        |
| result (i/uc_chloroform_67-66-3)                                                                                                          |           |                                                              |        |
| General Statistics                                                                                                                        |           |                                                              |        |
| Total Number of Observations                                                                                                              | 244       | Number of Distinct Observations                              | 131    |
| Number of Detects                                                                                                                         | 135       | Number of Non-Detects                                        | 109    |
| Number of Distinct Detects                                                                                                                | 126       | Number of Distinct Non-Detects                               | 5      |
| Minimum Detect                                                                                                                            | 0.127     | Minimum Non-Detect                                           | 0.125  |
| Maximum Detect                                                                                                                            | 11        | Maximum Non-Detect                                           | 2.5    |
| Variance Detects                                                                                                                          | 8.767     | Percent Non-Detects                                          | 44.67% |
| Mean Detects                                                                                                                              | 2.387     | SD Detects                                                   | 2.961  |
| Median Detects                                                                                                                            | 1.58      | CV Detects                                                   | 1.241  |
| Skewness Detects                                                                                                                          | 1.69      | Kurtosis Detects                                             | 1.779  |
| Mean of Logged Detects                                                                                                                    | 0.0524    | SD of Logged Detects                                         | 1.381  |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.713     | Normal GOF Test on Detected Observations Only                |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0         | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.223     | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0766    | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |           |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |           |                                                              |        |
| KM Mean                                                                                                                                   | 1.38      | KM Standard Error of Mean                                    | 0.158  |
| KM SD                                                                                                                                     | 2.464     | 95% KM (BCA) UCL                                             | 1.641  |
| 95% KM (t) UCL                                                                                                                            | 1.641     | 95% KM (Percentile Bootstrap) UCL                            | 1.649  |
| 95% KM (z) UCL                                                                                                                            | 1.641     | 95% KM Bootstrap t UCL                                       | 1.686  |
| 90% KM Chebyshev UCL                                                                                                                      | 1.855     | 95% KM Chebyshev UCL                                         | 2.07   |
| 97.5% KM Chebyshev UCL                                                                                                                    | 2.369     | 99% KM Chebyshev UCL                                         | 2.956  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |           |                                                              |        |
| A-D Test Statistic                                                                                                                        | 3.696     | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.797     | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.137     | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.0837    | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |           |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |           |                                                              |        |
| k hat (MLE)                                                                                                                               | 0.734     | k star (bias corrected MLE)                                  | 0.723  |
| Theta hat (MLE)                                                                                                                           | 3.25      | Theta star (bias corrected MLE)                              | 3.301  |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |           |                                                      |                          |  |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------|--------------------------|--|-------|
| nu hat (MLE)                                                                                                                              |           | 198.3                                                | nu star (bias corrected) |  | 195.2 |
| Mean (detects)                                                                                                                            |           | 2.387                                                |                          |  |       |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |           |                                                      |                          |  |       |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |           |                                                      |                          |  |       |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |           |                                                      |                          |  |       |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |           |                                                      |                          |  |       |
| This is especially true when the sample size is small.                                                                                    |           |                                                      |                          |  |       |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |           |                                                      |                          |  |       |
| Minimum                                                                                                                                   | 0.01      | Mean                                                 | 1.326                    |  |       |
| Maximum                                                                                                                                   | 11        | Median                                               | 0.168                    |  |       |
| SD                                                                                                                                        | 2.497     | CV                                                   | 1.883                    |  |       |
| k hat (MLE)                                                                                                                               | 0.3       | k star (bias corrected MLE)                          | 0.299                    |  |       |
| Theta hat (MLE)                                                                                                                           | 4.417     | Theta star (bias corrected MLE)                      | 4.431                    |  |       |
| nu hat (MLE)                                                                                                                              | 146.5     | nu star (bias corrected)                             | 146.1                    |  |       |
| Adjusted Level of Significance (β)                                                                                                        | 0.049     |                                                      |                          |  |       |
| Approximate Chi Square Value (146.05, α)                                                                                                  | 119.1     | Adjusted Chi Square Value (146.05, β)                | 119                      |  |       |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 1.626     | 95% Gamma Adjusted UCL (use when n<50)               | 1.628                    |  |       |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |           |                                                      |                          |  |       |
| Mean (KM)                                                                                                                                 | 1.38      | SD (KM)                                              | 2.464                    |  |       |
| Variance (KM)                                                                                                                             | 6.073     | SE of Mean (KM)                                      | 0.158                    |  |       |
| k hat (KM)                                                                                                                                | 0.314     | k star (KM)                                          | 0.312                    |  |       |
| nu hat (KM)                                                                                                                               | 153       | nu star (KM)                                         | 152.5                    |  |       |
| theta hat (KM)                                                                                                                            | 4.401     | theta star (KM)                                      | 4.417                    |  |       |
| 80% gamma percentile (KM)                                                                                                                 | 2.137     | 90% gamma percentile (KM)                            | 4.049                    |  |       |
| 95% gamma percentile (KM)                                                                                                                 | 6.23      | 99% gamma percentile (KM)                            | 11.87                    |  |       |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                      |                          |  |       |
| Approximate Chi Square Value (152.48, α)                                                                                                  | 124.9     | Adjusted Chi Square Value (152.48, β)                | 124.8                    |  |       |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 1.684     | 95% Gamma Adjusted KM-UCL (use when n<50)            | 1.686                    |  |       |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                      |                          |  |       |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.899     | Shapiro Wilk GOF Test                                |                          |  |       |
| 5% Shapiro Wilk P Value                                                                                                                   | 3.348E-13 | Detected Data Not Lognormal at 5% Significance Level |                          |  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.134     | Lilliefors GOF Test                                  |                          |  |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.0766    | Detected Data Not Lognormal at 5% Significance Level |                          |  |       |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                      |                          |  |       |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                      |                          |  |       |
| Mean in Original Scale                                                                                                                    | 1.349     | Mean in Log Scale                                    | -1.422                   |  |       |
| SD in Original Scale                                                                                                                      | 2.485     | SD in Log Scale                                      | 2.09                     |  |       |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 1.612     | 95% Percentile Bootstrap UCL                         | 1.611                    |  |       |
| 95% BCA Bootstrap UCL                                                                                                                     | 1.634     | 95% Bootstrap t UCL                                  | 1.624                    |  |       |
| 95% H-UCL (Log ROS)                                                                                                                       | 3.33      |                                                      |                          |  |       |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                      |                          |  |       |
| KM Mean (logged)                                                                                                                          | -0.888    | KM Geo Mean                                          | 0.412                    |  |       |
| KM SD (logged)                                                                                                                            | 1.469     | 95% Critical H Value (KM-Log)                        | 2.598                    |  |       |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0946    | 95% H-UCL (KM -Log)                                  | 1.546                    |  |       |
| KM SD (logged)                                                                                                                            | 1.469     | 95% Critical H Value (KM-Log)                        | 2.598                    |  |       |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0946    |                                                      |                          |  |       |
| DL/2 Statistics                                                                                                                           |           |                                                      |                          |  |       |
| DL/2 Normal                                                                                                                               |           |                                                      | DL/2 Log-Transformed     |  |       |
| Mean in Original Scale                                                                                                                    | 1.368     | Mean in Log Scale                                    | -1.13                    |  |       |
| SD in Original Scale                                                                                                                      | 2.477     | SD in Log Scale                                      | 1.717                    |  |       |
| 95% t UCL (Assumes normality)                                                                                                             | 1.629     | 95% H-Stat UCL                                       | 1.934                    |  |       |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                      |                          |  |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                      |                          |  |       |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                      |                          |  |       |
| Suggested UCL to Use                                                                                                                      |           |                                                      |                          |  |       |
| 95% KM (Chebyshev) UCL                                                                                                                    | 2.07      |                                                      |                          |  |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                      |                          |  |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                      |                          |  |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                      |                          |  |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                      |                          |  |       |
| result (/uc_cis-1,2-dichloroethene_156-59-2)                                                                                              |           |                                                      |                          |  |       |
| General Statistics                                                                                                                        |           |                                                      |                          |  |       |
| Total Number of Observations                                                                                                              | 244       | Number of Distinct Observations                      | 115                      |  |       |
| Number of Detects                                                                                                                         | 120       | Number of Non-Detects                                | 124                      |  |       |
| Number of Distinct Detects                                                                                                                | 113       | Number of Distinct Non-Detects                       | 2                        |  |       |
| Minimum Detect                                                                                                                            | 0.252     | Minimum Non-Detect                                   | 0.25                     |  |       |
| Maximum Detect                                                                                                                            | 27.6      | Maximum Non-Detect                                   | 1                        |  |       |
| Variance Detects                                                                                                                          | 34.01     | Percent Non-Detects                                  | 50.82%                   |  |       |
| Mean Detects                                                                                                                              | 4.325     | SD Detects                                           | 5.832                    |  |       |
| Median Detects                                                                                                                            | 0.918     | CV Detects                                           | 1.349                    |  |       |
| Skewness Detects                                                                                                                          | 1.803     | Kurtosis Detects                                     | 2.99                     |  |       |
| Mean of Logged Detects                                                                                                                    | 0.522     | SD of Logged Detects                                 | 1.423                    |  |       |
| Normal GOF Test on Detects Only                                                                                                           |           |                                                      |                          |  |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.722     | Normal GOF Test on Detected Observations Only        |                          |  |       |
| 5% Shapiro Wilk P Value                                                                                                                   | 0         | Detected Data Not Normal at 5% Significance Level    |                          |  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.256     | Lilliefors GOF Test                                  |                          |  |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.0812    | Detected Data Not Normal at 5% Significance Level    |                          |  |       |
| Detected Data Not Normal at 5% Significance Level                                                                                         |           |                                                      |                          |  |       |



TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |           |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|--------|
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |           |                                                              |        |
| KM Mean                                                                                                                                   | 2.256     | KM Standard Error of Mean                                    | 0.293  |
| KM SD                                                                                                                                     | 4.553     | 95% KM (BCA) UCL                                             | 2.833  |
| 95% KM (t) UCL                                                                                                                            | 2.74      | 95% KM (Percentile Bootstrap) UCL                            | 2.743  |
| 95% KM (z) UCL                                                                                                                            | 2.738     | 95% KM Bootstrap t UCL                                       | 2.847  |
| 90% KM Chebyshev UCL                                                                                                                      | 3.134     | 95% KM Chebyshev UCL                                         | 3.532  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 4.084     | 99% KM Chebyshev UCL                                         | 5.169  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |           |                                                              |        |
| A-D Test Statistic                                                                                                                        | 5.502     | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.805     | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.219     | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.0882    | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |           |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                                    |           |                                                              |        |
| k hat (MLE)                                                                                                                               | 0.649     | k star (bias corrected MLE)                                  | 0.638  |
| Theta hat (MLE)                                                                                                                           | 6.668     | Theta star (bias corrected MLE)                              | 6.779  |
| nu hat (MLE)                                                                                                                              | 155.7     | nu star (bias corrected)                                     | 153.1  |
| Mean (detects)                                                                                                                            | 4.325     |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |           |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |           |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |           |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |           |                                                              |        |
| This is especially true when the sample size is small.                                                                                    |           |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |           |                                                              |        |
| Minimum                                                                                                                                   | 0.01      | Mean                                                         | 2.134  |
| Maximum                                                                                                                                   | 27.6      | Median                                                       | 0.01   |
| SD                                                                                                                                        | 4.617     | CV                                                           | 2.164  |
| k hat (MLE)                                                                                                                               | 0.251     | k star (bias corrected MLE)                                  | 0.251  |
| Theta hat (MLE)                                                                                                                           | 8.495     | Theta star (bias corrected MLE)                              | 8.507  |
| nu hat (MLE)                                                                                                                              | 122.6     | nu star (bias corrected)                                     | 122.4  |
| Adjusted Level of Significance (β)                                                                                                        | 0.049     |                                                              |        |
| Approximate Chi Square Value (122.42, α)                                                                                                  | 97.87     | Adjusted Chi Square Value (122.42, β)                        | 97.74  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 2.669     | 95% Gamma Adjusted UCL (use when n<50)                       | 2.673  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |           |                                                              |        |
| Mean (KM)                                                                                                                                 | 2.256     | SD (KM)                                                      | 4.553  |
| Variance (KM)                                                                                                                             | 20.73     | SE of Mean (KM)                                              | 0.293  |
| k hat (KM)                                                                                                                                | 0.246     | k star (KM)                                                  | 0.245  |
| nu hat (KM)                                                                                                                               | 119.9     | nu star (KM)                                                 | 119.7  |
| theta hat (KM)                                                                                                                            | 9.186     | theta star (KM)                                              | 9.197  |
| 80% gamma percentile (KM)                                                                                                                 | 3.255     | 90% gamma percentile (KM)                                    | 6.781  |
| 95% gamma percentile (KM)                                                                                                                 | 10.98     | 99% gamma percentile (KM)                                    | 22.2   |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |           |                                                              |        |
| Approximate Chi Square Value (119.73, α)                                                                                                  | 95.46     | Adjusted Chi Square Value (119.73, β)                        | 95.33  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 2.83      | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 2.834  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |           |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.886     | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 2.102E-13 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.172     | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0812    | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |           |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |           |                                                              |        |
| Mean in Original Scale                                                                                                                    | 2.169     | Mean in Log Scale                                            | -1.347 |
| SD in Original Scale                                                                                                                      | 4.601     | SD in Log Scale                                              | 2.314  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 2.656     | 95% Percentile Bootstrap UCL                                 | 2.67   |
| 95% BCA Bootstrap UCL                                                                                                                     | 2.723     | 95% Bootstrap t UCL                                          | 2.722  |
| 95% H-UCL (Log ROS)                                                                                                                       | 6.405     |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |           |                                                              |        |
| KM Mean (logged)                                                                                                                          | -0.442    | KM Geo Mean                                                  | 0.643  |
| KM SD (logged)                                                                                                                            | 1.376     | 95% Critical H Value (KM-Log)                                | 2.503  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0885    | 95% H-UCL (KM -Log)                                          | 2.065  |
| KM SD (logged)                                                                                                                            | 1.376     | 95% Critical H Value (KM-Log)                                | 2.503  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0885    |                                                              |        |
| DL/2 Statistics                                                                                                                           |           |                                                              |        |
| DL/2 Normal                                                                                                                               |           | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 2.2       | Mean in Log Scale                                            | -0.766 |
| SD in Original Scale                                                                                                                      | 4.588     | SD in Log Scale                                              | 1.627  |
| 95% t UCL (Assumes normality)                                                                                                             | 2.685     | 95% H-Stat UCL                                               | 2.333  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |           |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |           |                                                              |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |           |                                                              |        |
| Suggested UCL to Use                                                                                                                      |           |                                                              |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 3.532     |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |           |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |           |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |           |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |           |                                                              |        |

result (i/uc\_mek (2-butanone)\_78-93-3)

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| General Statistics                                                                                                        |          |                                                              |        |
|---------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------|--------|
| Total Number of Observations                                                                                              | 244      | Number of Distinct Observations                              | 14     |
| Number of Detects                                                                                                         | 11       | Number of Non-Detects                                        | 233    |
| Number of Distinct Detects                                                                                                | 11       | Number of Distinct Non-Detects                               | 3      |
| Minimum Detect                                                                                                            | 3.33     | Minimum Non-Detect                                           | 2.5    |
| Maximum Detect                                                                                                            | 2910     | Maximum Non-Detect                                           | 25     |
| Variance Detects                                                                                                          | 1362087  | Percent Non-Detects                                          | 95.49% |
| Mean Detects                                                                                                              | 1424     | SD Detects                                                   | 1167   |
| Median Detects                                                                                                            | 1470     | CV Detects                                                   | 0.82   |
| Skewness Detects                                                                                                          | -0.113   | Kurtosis Detects                                             | -1.841 |
| Mean of Logged Detects                                                                                                    | 5.748    | SD of Logged Detects                                         | 2.951  |
| Normal GOF Test on Detects Only                                                                                           |          |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.873    | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk Critical Value                                                                                            | 0.85     | Detected Data appear Normal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                 | 0.176    | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.251    | Detected Data appear Normal at 5% Significance Level         |        |
| Detected Data appear Normal at 5% Significance Level                                                                      |          |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |          |                                                              |        |
| KM Mean                                                                                                                   | 66.58    | KM Standard Error of Mean                                    | 25.37  |
| KM SD                                                                                                                     | 377.9    | 95% KM (BCA) UCL                                             | 106    |
| 95% KM (t) UCL                                                                                                            | 108.5    | 95% KM (Percentile Bootstrap) UCL                            | 108.4  |
| 95% KM (z) UCL                                                                                                            | 108.3    | 95% KM Bootstrap t UCL                                       | 123.1  |
| 90% KM Chebyshev UCL                                                                                                      | 142.7    | 95% KM Chebyshev UCL                                         | 177.2  |
| 97.5% KM Chebyshev UCL                                                                                                    | 225      | 99% KM Chebyshev UCL                                         | 319    |
| Gamma GOF Tests on Detected Observations Only                                                                             |          |                                                              |        |
| A-D Test Statistic                                                                                                        | 1.34     | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                     | 0.795    | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                        | 0.273    | Kolmogorov-Smimov GOF                                        |        |
| 5% K-S Critical Value                                                                                                     | 0.271    | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                              |          |                                                              |        |
| Gamma Statistics on Detected Data Only                                                                                    |          |                                                              |        |
| k hat (MLE)                                                                                                               | 0.43     | k star (bias corrected MLE)                                  | 0.373  |
| Theta hat (MLE)                                                                                                           | 3312     | Theta star (bias corrected MLE)                              | 3815   |
| nu hat (MLE)                                                                                                              | 9.457    | nu star (bias corrected)                                     | 8.211  |
| Mean (detects)                                                                                                            | 1424     |                                                              |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |          |                                                              |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |          |                                                              |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |          |                                                              |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |          |                                                              |        |
| This is especially true when the sample size is small.                                                                    |          |                                                              |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |          |                                                              |        |
| Minimum                                                                                                                   | 0.01     | Mean                                                         | 64.45  |
| Maximum                                                                                                                   | 2910     | Median                                                       | 0.01   |
| SD                                                                                                                        | 379.1    | CV                                                           | 5.881  |
| k hat (MLE)                                                                                                               | 0.0984   | k star (bias corrected MLE)                                  | 0.0999 |
| Theta hat (MLE)                                                                                                           | 654.9    | Theta star (bias corrected MLE)                              | 644.9  |
| nu hat (MLE)                                                                                                              | 48.03    | nu star (bias corrected)                                     | 48.77  |
| Adjusted Level of Significance (β)                                                                                        | 0.049    |                                                              |        |
| Approximate Chi Square Value (48.77, α)                                                                                   | 33.74    | Adjusted Chi Square Value (48.77, β)                         | 33.66  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 93.17    | 95% Gamma Adjusted UCL (use when n<50)                       | 93.37  |
| Estimates of Gamma Parameters using KM Estimates                                                                          |          |                                                              |        |
| Mean (KM)                                                                                                                 | 66.58    | SD (KM)                                                      | 377.9  |
| Variance (KM)                                                                                                             | 142803   | SE of Mean (KM)                                              | 25.37  |
| k hat (KM)                                                                                                                | 0.031    | k star (KM)                                                  | 0.0334 |
| nu hat (KM)                                                                                                               | 15.15    | nu star (KM)                                                 | 16.3   |
| theta hat (KM)                                                                                                            | 2145     | theta star (KM)                                              | 1994   |
| 80% gamma percentile (KM)                                                                                                 | 1.442    | 90% gamma percentile (KM)                                    | 50.24  |
| 95% gamma percentile (KM)                                                                                                 | 282.7    | 99% gamma percentile (KM)                                    | 1668   |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |          |                                                              |        |
| Approximate Chi Square Value (16.30, α)                                                                                   | 8.172    | Adjusted Chi Square Value (16.30, β)                         | 8.137  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 132.8    | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 133.3  |
| Lognormal GOF Test on Detected Observations Only                                                                          |          |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.695    | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk Critical Value                                                                                            | 0.85     | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                 | 0.3      | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                              | 0.251    | Detected Data Not Lognormal at 5% Significance Level         |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                      |          |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                        |          |                                                              |        |
| Mean in Original Scale                                                                                                    | 64.43    | Mean in Log Scale                                            | -9.675 |
| SD in Original Scale                                                                                                      | 379      | SD in Log Scale                                              | 7.287  |
| 95% t UCL (assumes normality of ROS data)                                                                                 | 104.5    | 95% Percentile Bootstrap UCL                                 | 105.5  |
| 95% BCA Bootstrap UCL                                                                                                     | 114.8    | 95% Bootstrap t UCL                                          | 125.7  |
| 95% H-UCL (Log ROS)                                                                                                       | 2.257E+9 |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                          |          |                                                              |        |
| KM Mean (logged)                                                                                                          | 1.134    | KM Geo Mean                                                  | 3.109  |
| KM SD (logged)                                                                                                            | 1.167    | 95% Critical H Value (KM-Log)                                | 2.303  |
| KM Standard Error of Mean (logged)                                                                                        | 0.0784   | 95% H-UCL (KM -Log)                                          | 7.299  |
| KM SD (logged)                                                                                                            | 1.167    | 95% Critical H Value (KM-Log)                                | 2.303  |
| KM Standard Error of Mean (logged)                                                                                        | 0.0784   |                                                              |        |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| DL/2 Statistics                                                                                                                           |        |                                                              |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|-------|
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                         |       |
| Mean in Original Scale                                                                                                                    | 65.59  | Mean in Log Scale                                            | 0.538 |
| SD in Original Scale                                                                                                                      | 378.8  | SD in Log Scale                                              | 1.32  |
| 95% t UCL (Assumes normality)                                                                                                             | 105.6  | 95% H-Stat UCL                                               | 5.034 |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                              |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                              |       |
| Detected Data appear Normal Distributed at 5% Significance Level                                                                          |        |                                                              |       |
| Suggested UCL to Use                                                                                                                      |        |                                                              |       |
| 95% KM (t) UCL                                                                                                                            | 108.5  |                                                              |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                              |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                              |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                              |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                              |       |
| result (/uc_tetrachloroethene_127-18-4)                                                                                                   |        |                                                              |       |
| General Statistics                                                                                                                        |        |                                                              |       |
| Total Number of Observations                                                                                                              | 244    | Number of Distinct Observations                              | 187   |
| Number of Detects                                                                                                                         | 203    | Number of Non-Detects                                        | 41    |
| Number of Distinct Detects                                                                                                                | 184    | Number of Distinct Non-Detects                               | 3     |
| Minimum Detect                                                                                                                            | 0.262  | Minimum Non-Detect                                           | 0.25  |
| Maximum Detect                                                                                                                            | 127    | Maximum Non-Detect                                           | 2.5   |
| Variance Detects                                                                                                                          | 335    | Percent Non-Detects                                          | 16.8% |
| Mean Detects                                                                                                                              | 19.04  | SD Detects                                                   | 18.3  |
| Median Detects                                                                                                                            | 17.4   | CV Detects                                                   | 0.961 |
| Skewness Detects                                                                                                                          | 2.381  | Kurtosis Detects                                             | 9.763 |
| Mean of Logged Detects                                                                                                                    | 2.389  | SD of Logged Detects                                         | 1.278 |
| Normal GOF Test on Detects Only                                                                                                           |        |                                                              |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.807  | Normal GOF Test on Detected Observations Only                |       |
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |       |
| Lilliefors Test Statistic                                                                                                                 | 0.152  | Lilliefors GOF Test                                          |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.0626 | Detected Data Not Normal at 5% Significance Level            |       |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |                                                              |       |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |                                                              |       |
| KM Mean                                                                                                                                   | 15.88  | KM Standard Error of Mean                                    | 1.16  |
| KM SD                                                                                                                                     | 18.07  | 95% KM (BCA) UCL                                             | 17.86 |
| 95% KM (t) UCL                                                                                                                            | 17.8   | 95% KM (Percentile Bootstrap) UCL                            | 17.89 |
| 95% KM (z) UCL                                                                                                                            | 17.79  | 95% KM Bootstrap t UCL                                       | 18.02 |
| 90% KM Chebyshev UCL                                                                                                                      | 19.36  | 95% KM Chebyshev UCL                                         | 20.94 |
| 97.5% KM Chebyshev UCL                                                                                                                    | 23.13  | 99% KM Chebyshev UCL                                         | 27.43 |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |                                                              |       |
| A-D Test Statistic                                                                                                                        | 1.818  | Anderson-Darling GOF Test                                    |       |
| 5% A-D Critical Value                                                                                                                     | 0.783  | Detected Data Not Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.1    | Kolmogorov-Smirnov GOF                                       |       |
| 5% K-S Critical Value                                                                                                                     | 0.0651 | Detected Data Not Gamma Distributed at 5% Significance Level |       |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |        |                                                              |       |
| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                              |       |
| k hat (MLE)                                                                                                                               | 1.032  | k star (bias corrected MLE)                                  | 1.02  |
| Theta hat (MLE)                                                                                                                           | 18.44  | Theta star (bias corrected MLE)                              | 18.66 |
| nu hat (MLE)                                                                                                                              | 419.1  | nu star (bias corrected)                                     | 414.2 |
| Mean (detects)                                                                                                                            | 19.04  |                                                              |       |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                              |       |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                              |       |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                              |       |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                              |       |
| This is especially true when the sample size is small.                                                                                    |        |                                                              |       |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                              |       |
| Minimum                                                                                                                                   | 0.01   | Mean                                                         | 15.85 |
| Maximum                                                                                                                                   | 127    | Median                                                       | 8.755 |
| SD                                                                                                                                        | 18.14  | CV                                                           | 1.145 |
| k hat (MLE)                                                                                                                               | 0.433  | k star (bias corrected MLE)                                  | 0.431 |
| Theta hat (MLE)                                                                                                                           | 36.58  | Theta star (bias corrected MLE)                              | 36.8  |
| nu hat (MLE)                                                                                                                              | 211.4  | nu star (bias corrected)                                     | 210.1 |
| Adjusted Level of Significance (β)                                                                                                        | 0.049  |                                                              |       |
| Approximate Chi Square Value (210.14, α)                                                                                                  | 177.6  | Adjusted Chi Square Value (210.14, β)                        | 177.4 |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 18.75  | 95% Gamma Adjusted UCL (use when n<50)                       | 18.77 |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |                                                              |       |
| Mean (KM)                                                                                                                                 | 15.88  | SD (KM)                                                      | 18.07 |
| Variance (KM)                                                                                                                             | 326.7  | SE of Mean (KM)                                              | 1.16  |
| k hat (KM)                                                                                                                                | 0.772  | k star (KM)                                                  | 0.766 |
| nu hat (KM)                                                                                                                               | 376.9  | nu star (KM)                                                 | 373.6 |
| theta hat (KM)                                                                                                                            | 20.57  | theta star (KM)                                              | 20.75 |
| 80% gamma percentile (KM)                                                                                                                 | 26.02  | 90% gamma percentile (KM)                                    | 39.03 |
| 95% gamma percentile (KM)                                                                                                                 | 52.35  | 99% gamma percentile (KM)                                    | 83.9  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |                                                              |       |
| Approximate Chi Square Value (373.62, α)                                                                                                  | 329.8  | Adjusted Chi Square Value (373.62, β)                        | 329.6 |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 17.99  | 95% Gamma Adjusted KM-UCL (use when n<50)                    | 18.01 |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                              |       |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.897  | Shapiro Wilk GOF Test                                        |       |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Lognormal at 5% Significance Level         |
| Lilliefors Test Statistic                                                                                                                 | 0.145  | Lilliefors GOF Test                                          |
| 5% Lilliefors Critical Value                                                                                                              | 0.0626 | Detected Data Not Lognormal at 5% Significance Level         |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |        |                                                              |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                              |
| Mean in Original Scale                                                                                                                    | 15.99  | Mean in Log Scale 1.948                                      |
| SD in Original Scale                                                                                                                      | 18.02  | SD in Log Scale 1.545                                        |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 17.9   | 95% Percentile Bootstrap UCL 18.03                           |
| 95% BCA Bootstrap UCL                                                                                                                     | 18.01  | 95% Bootstrap t UCL 18.21                                    |
| 95% H-UCL (Log ROS)                                                                                                                       | 30.18  |                                                              |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                              |
| KM Mean (logged)                                                                                                                          | 1.758  | KM Geo Mean 5.803                                            |
| KM SD (logged)                                                                                                                            | 1.824  | 95% Critical H Value (KM-Log) 2.98                           |
| KM Standard Error of Mean (logged)                                                                                                        | 0.117  | 95% H-UCL (KM -Log) 43.42                                    |
| KM SD (logged)                                                                                                                            | 1.824  | 95% Critical H Value (KM-Log) 2.98                           |
| KM Standard Error of Mean (logged)                                                                                                        | 0.117  |                                                              |
| DL/2 Statistics                                                                                                                           |        |                                                              |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                         |
| Mean in Original Scale                                                                                                                    | 15.87  | Mean in Log Scale 1.663                                      |
| SD in Original Scale                                                                                                                      | 18.12  | SD in Log Scale 2.007                                        |
| 95% t UCL (Assumes normality)                                                                                                             | 17.79  | 95% H-Stat UCL 59.58                                         |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                              |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                              |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |        |                                                              |
| Suggested UCL to Use                                                                                                                      |        |                                                              |
| 95% KM (Chebyshev) UCL                                                                                                                    | 20.94  |                                                              |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                              |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                              |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                              |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                              |
| result (/uc_trichloroethene_79-01-6)                                                                                                      |        |                                                              |
| General Statistics                                                                                                                        |        |                                                              |
| Total Number of Observations                                                                                                              | 244    | Number of Distinct Observations 180                          |
| Number of Detects                                                                                                                         | 200    | Number of Non-Detects 44                                     |
| Number of Distinct Detects                                                                                                                | 178    | Number of Distinct Non-Detects 4                             |
| Minimum Detect                                                                                                                            | 0.39   | Minimum Non-Detect 0.25                                      |
| Maximum Detect                                                                                                                            | 37.1   | Maximum Non-Detect 2.5                                       |
| Variance Detects                                                                                                                          | 62.62  | Percent Non-Detects 18.03%                                   |
| Mean Detects                                                                                                                              | 7.254  | SD Detects 7.914                                             |
| Median Detects                                                                                                                            | 4.56   | CV Detects 1.091                                             |
| Skewness Detects                                                                                                                          | 1.96   | Kurtosis Detects 3.295                                       |
| Mean of Logged Detects                                                                                                                    | 1.492  | SD of Logged Detects 1                                       |
| Normal GOF Test on Detects Only                                                                                                           |        |                                                              |
| Shapiro Wilk Test Statistic                                                                                                               | 0.729  | Normal GOF Test on Detected Observations Only                |
| 5% Shapiro Wilk P Value                                                                                                                   | 0      | Detected Data Not Normal at 5% Significance Level            |
| Lilliefors Test Statistic                                                                                                                 | 0.213  | Lilliefors GOF Test                                          |
| 5% Lilliefors Critical Value                                                                                                              | 0.0631 | Detected Data Not Normal at 5% Significance Level            |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |                                                              |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |                                                              |
| KM Mean                                                                                                                                   | 6.01   | KM Standard Error of Mean 0.489                              |
| KM SD                                                                                                                                     | 7.625  | 95% KM (BCA) UCL 6.794                                       |
| 95% KM (t) UCL                                                                                                                            | 6.818  | 95% KM (Percentile Bootstrap) UCL 6.837                      |
| 95% KM (z) UCL                                                                                                                            | 6.815  | 95% KM Bootstrap t UCL 6.905                                 |
| 90% KM Chebyshev UCL                                                                                                                      | 7.478  | 95% KM Chebyshev UCL 8.143                                   |
| 97.5% KM Chebyshev UCL                                                                                                                    | 9.066  | 99% KM Chebyshev UCL 10.88                                   |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |                                                              |
| A-D Test Statistic                                                                                                                        | 3.543  | Anderson-Darling GOF Test                                    |
| 5% A-D Critical Value                                                                                                                     | 0.78   | Detected Data Not Gamma Distributed at 5% Significance Level |
| K-S Test Statistic                                                                                                                        | 0.0905 | Kolmogorov-Smirnov GOF                                       |
| 5% K-S Critical Value                                                                                                                     | 0.0653 | Detected Data Not Gamma Distributed at 5% Significance Level |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |        |                                                              |
| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                              |
| k hat (MLE)                                                                                                                               | 1.159  | k star (bias corrected MLE) 1.145                            |
| Theta hat (MLE)                                                                                                                           | 6.261  | Theta star (bias corrected MLE) 6.338                        |
| nu hat (MLE)                                                                                                                              | 463.4  | nu star (bias corrected) 457.8                               |
| Mean (detects)                                                                                                                            | 7.254  |                                                              |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                              |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                              |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                              |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                              |
| This is especially true when the sample size is small.                                                                                    |        |                                                              |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                              |
| Minimum                                                                                                                                   | 0.01   | Mean 5.955                                                   |
| Maximum                                                                                                                                   | 37.1   | Median 3.475                                                 |
| SD                                                                                                                                        | 7.681  | CV 1.29                                                      |
| k hat (MLE)                                                                                                                               | 0.472  | k star (bias corrected MLE) 0.469                            |
| Theta hat (MLE)                                                                                                                           | 12.61  | Theta star (bias corrected MLE) 12.69                        |
| nu hat (MLE)                                                                                                                              | 230.5  | nu star (bias corrected) 229                                 |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |         |                                                              |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|--------|
| Adjusted Level of Significance ( $\beta$ )                                                                                                | 0.049   | Adjusted Chi Square Value (228.96, $\beta$ )                 | 194.8  |
| Approximate Chi Square Value (228.96, $\alpha$ )                                                                                          | 194.9   | 95% Gamma Adjusted UCL (use when $n < 50$ )                  | 7.001  |
| 95% Gamma Approximate UCL (use when $n \geq 50$ )                                                                                         | 6.994   |                                                              |        |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |         |                                                              |        |
| Mean (KM)                                                                                                                                 | 6.01    | SD (KM)                                                      | 7.625  |
| Variance (KM)                                                                                                                             | 58.14   | SE of Mean (KM)                                              | 0.489  |
| k hat (KM)                                                                                                                                | 0.621   | k star (KM)                                                  | 0.616  |
| nu hat (KM)                                                                                                                               | 303.2   | nu star (KM)                                                 | 300.8  |
| theta hat (KM)                                                                                                                            | 9.674   | theta star (KM)                                              | 9.751  |
| 80% gamma percentile (KM)                                                                                                                 | 9.905   | 90% gamma percentile (KM)                                    | 15.54  |
| 95% gamma percentile (KM)                                                                                                                 | 21.42   | 99% gamma percentile (KM)                                    | 35.61  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |         |                                                              |        |
| Approximate Chi Square Value (300.77, $\alpha$ )                                                                                          | 261.6   | Adjusted Chi Square Value (300.77, $\beta$ )                 | 261.4  |
| 95% Gamma Approximate KM-UCL (use when $n \geq 50$ )                                                                                      | 6.91    | 95% Gamma Adjusted KM-UCL (use when $n < 50$ )               | 6.915  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |         |                                                              |        |
| Shapiro Wilk Approximate Test Statistic                                                                                                   | 0.964   | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk P Value                                                                                                                   | 0.00185 | Detected Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.0532  | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.0631  | Detected Data appear Lognormal at 5% Significance Level      |        |
| Detected Data appear Approximate Lognormal at 5% Significance Level                                                                       |         |                                                              |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |         |                                                              |        |
| Mean in Original Scale                                                                                                                    | 6.052   | Mean in Log Scale                                            | 1.1    |
| SD in Original Scale                                                                                                                      | 7.609   | SD in Log Scale                                              | 1.256  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 6.856   | 95% Percentile Bootstrap UCL                                 | 6.892  |
| 95% BCA Bootstrap UCL                                                                                                                     | 6.944   | 95% Bootstrap t UCL                                          | 6.879  |
| 95% H-UCL (Log ROS)                                                                                                                       | 8.012   |                                                              |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |         |                                                              |        |
| KM Mean (logged)                                                                                                                          | 1       | KM Geo Mean                                                  | 2.718  |
| KM SD (logged)                                                                                                                            | 1.399   | 95% Critical H Value (KM-Log)                                | 2.527  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0903  | 95% H-UCL (KM -Log)                                          | 9.077  |
| KM SD (logged)                                                                                                                            | 1.399   | 95% Critical H Value (KM-Log)                                | 2.527  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0903  |                                                              |        |
| DL/2 Statistics                                                                                                                           |         |                                                              |        |
| DL/2 Normal                                                                                                                               |         | DL/2 Log-Transformed                                         |        |
| Mean in Original Scale                                                                                                                    | 5.999   | Mean in Log Scale                                            | 0.919  |
| SD in Original Scale                                                                                                                      | 7.649   | SD in Log Scale                                              | 1.559  |
| 95% t UCL (Assumes normality)                                                                                                             | 6.807   | 95% H-Stat UCL                                               | 11.07  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |         |                                                              |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |         |                                                              |        |
| Detected Data appear Approximate Lognormal Distributed at 5% Significance Level                                                           |         |                                                              |        |
| Suggested UCL to Use                                                                                                                      |         |                                                              |        |
| KM H-UCL                                                                                                                                  | 9.077   |                                                              |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |         |                                                              |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |         |                                                              |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |         |                                                              |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |         |                                                              |        |
| result (i/uc_vinyl chloride_75-01-4)                                                                                                      |         |                                                              |        |
| General Statistics                                                                                                                        |         |                                                              |        |
| Total Number of Observations                                                                                                              | 244     | Number of Distinct Observations                              | 25     |
| Number of Detects                                                                                                                         | 22      | Number of Non-Detects                                        | 222    |
| Number of Distinct Detects                                                                                                                | 22      | Number of Distinct Non-Detects                               | 4      |
| Minimum Detect                                                                                                                            | 0.253   | Minimum Non-Detect                                           | 0.25   |
| Maximum Detect                                                                                                                            | 7.98    | Maximum Non-Detect                                           | 2.5    |
| Variance Detects                                                                                                                          | 2.44    | Percent Non-Detects                                          | 90.98% |
| Mean Detects                                                                                                                              | 1.517   | SD Detects                                                   | 1.562  |
| Median Detects                                                                                                                            | 1.34    | CV Detects                                                   | 1.029  |
| Skewness Detects                                                                                                                          | 3.586   | Kurtosis Detects                                             | 15.22  |
| Mean of Logged Detects                                                                                                                    | 0.0964  | SD of Logged Detects                                         | 0.818  |
| Normal GOF Test on Detects Only                                                                                                           |         |                                                              |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.575   | Shapiro Wilk GOF Test                                        |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.911   | Detected Data Not Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                                 | 0.331   | Lilliefors GOF Test                                          |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.184   | Detected Data Not Normal at 5% Significance Level            |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |         |                                                              |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |         |                                                              |        |
| KM Mean                                                                                                                                   | 0.366   | KM Standard Error of Mean                                    | 0.0386 |
| KM SD                                                                                                                                     | 0.586   | 95% KM (BCA) UCL                                             | 0.436  |
| 95% KM (t) UCL                                                                                                                            | 0.43    | 95% KM (Percentile Bootstrap) UCL                            | 0.439  |
| 95% KM (z) UCL                                                                                                                            | 0.43    | 95% KM Bootstrap t UCL                                       | 0.48   |
| 90% KM Chebyshev UCL                                                                                                                      | 0.482   | 95% KM Chebyshev UCL                                         | 0.534  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 0.607   | 99% KM Chebyshev UCL                                         | 0.75   |
| Gamma GOF Tests on Detected Observations Only                                                                                             |         |                                                              |        |
| A-D Test Statistic                                                                                                                        | 1.037   | Anderson-Darling GOF Test                                    |        |
| 5% A-D Critical Value                                                                                                                     | 0.758   | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.217   | Kolmogorov-Smirnov GOF                                       |        |
| 5% K-S Critical Value                                                                                                                     | 0.188   | Detected Data Not Gamma Distributed at 5% Significance Level |        |
| Detected Data Not Gamma Distributed at 5% Significance Level                                                                              |         |                                                              |        |

TABLE B.2  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                      |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------|
| k hat (MLE)                                                                                                                               | 1.707  | k star (bias corrected MLE)                          | 1.505  |
| Theta hat (MLE)                                                                                                                           | 0.889  | Theta star (bias corrected MLE)                      | 1.008  |
| nu hat (MLE)                                                                                                                              | 75.13  | nu star (bias corrected)                             | 66.22  |
| Mean (detects)                                                                                                                            | 1.517  |                                                      |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                      |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                      |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                      |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                      |        |
| This is especially true when the sample size is small.                                                                                    |        |                                                      |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                      |        |
| Minimum                                                                                                                                   | 0.01   | Mean                                                 | 0.146  |
| Maximum                                                                                                                                   | 7.98   | Median                                               | 0.01   |
| SD                                                                                                                                        | 0.631  | CV                                                   | 4.324  |
| k hat (MLE)                                                                                                                               | 0.305  | k star (bias corrected MLE)                          | 0.304  |
| Theta hat (MLE)                                                                                                                           | 0.479  | Theta star (bias corrected MLE)                      | 0.48   |
| nu hat (MLE)                                                                                                                              | 148.7  | nu star (bias corrected)                             | 148.2  |
| Adjusted Level of Significance (β)                                                                                                        | 0.049  |                                                      |        |
| Approximate Chi Square Value (148.25, α)                                                                                                  | 121.1  | Adjusted Chi Square Value (148.25, β)                | 121    |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.179  | 95% Gamma Adjusted UCL (use when n<50)               | 0.179  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |                                                      |        |
| Mean (KM)                                                                                                                                 | 0.366  | SD (KM)                                              | 0.586  |
| Variance (KM)                                                                                                                             | 0.344  | SE of Mean (KM)                                      | 0.0386 |
| k hat (KM)                                                                                                                                | 0.391  | k star (KM)                                          | 0.388  |
| nu hat (KM)                                                                                                                               | 190.6  | nu star (KM)                                         | 189.6  |
| theta hat (KM)                                                                                                                            | 0.938  | theta star (KM)                                      | 0.943  |
| 80% gamma percentile (KM)                                                                                                                 | 0.589  | 90% gamma percentile (KM)                            | 1.04   |
| 95% gamma percentile (KM)                                                                                                                 | 1.538  | 99% gamma percentile (KM)                            | 2.793  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |                                                      |        |
| Approximate Chi Square Value (189.56, α)                                                                                                  | 158.7  | Adjusted Chi Square Value (189.56, β)                | 158.5  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 0.438  | 95% Gamma Adjusted KM-UCL (use when n<50)            | 0.438  |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                      |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.895  | Shapiro Wilk GOF Test                                |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.911  | Detected Data Not Lognormal at 5% Significance Level |        |
| Lilliefors Test Statistic                                                                                                                 | 0.207  | Lilliefors GOF Test                                  |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.184  | Detected Data Not Lognormal at 5% Significance Level |        |
| Detected Data Not Lognormal at 5% Significance Level                                                                                      |        |                                                      |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                      |        |
| Mean in Original Scale                                                                                                                    | 0.201  | Mean in Log Scale                                    | -3.238 |
| SD in Original Scale                                                                                                                      | 0.625  | SD in Log Scale                                      | 1.831  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 0.268  | 95% Percentile Bootstrap UCL                         | 0.273  |
| 95% BCA Bootstrap UCL                                                                                                                     | 0.312  | 95% Bootstrap t UCL                                  | 0.309  |
| 95% H-UCL (Log ROS)                                                                                                                       | 0.298  |                                                      |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                      |        |
| KM Mean (logged)                                                                                                                          | -1.249 | KM Geo Mean                                          | 0.287  |
| KM SD (logged)                                                                                                                            | 0.492  | 95% Critical H Value (KM-Log)                        | 1.804  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0326 | 95% H-UCL (KM -Log)                                  | 0.343  |
| KM SD (logged)                                                                                                                            | 0.492  | 95% Critical H Value (KM-Log)                        | 1.804  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0326 |                                                      |        |
| DL/2 Statistics                                                                                                                           |        |                                                      |        |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                 |        |
| Mean in Original Scale                                                                                                                    | 0.293  | Mean in Log Scale                                    | -1.766 |
| SD in Original Scale                                                                                                                      | 0.626  | SD in Log Scale                                      | 0.773  |
| 95% t UCL (Assumes normality)                                                                                                             | 0.359  | 95% H-Stat UCL                                       | 0.254  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                      |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                      |        |
| Data do not follow a Discernible Distribution at 5% Significance Level                                                                    |        |                                                      |        |
| Suggested UCL to Use                                                                                                                      |        |                                                      |        |
| 95% KM (Chebyshev) UCL                                                                                                                    | 0.534  |                                                      |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                      |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                      |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                      |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                      |        |



TABLE B.3  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| UCL Statistics for Data Sets with Non-Detects |                                |  |  |
|-----------------------------------------------|--------------------------------|--|--|
| User Selected Options                         |                                |  |  |
| Date/Time of Computation                      | ProUCL 5.18/16/2017 8:08:08 AM |  |  |
| From File                                     | WorkSheet.xls                  |  |  |
| Full Precision                                | OFF                            |  |  |
| Confidence Coefficient                        | 95%                            |  |  |
| Number of Bootstrap Operations                | 2000                           |  |  |

result (memphis\_carbon tetrachloride\_56-23-5)

| General Statistics                                                                                                        |         |                                                                 |        |
|---------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------|--------|
| Total Number of Observations                                                                                              | 21      | Number of Distinct Observations                                 | 16     |
| Number of Detects                                                                                                         | 14      | Number of Non-Detects                                           | 7      |
| Number of Distinct Detects                                                                                                | 14      | Number of Distinct Non-Detects                                  | 2      |
| Minimum Detect                                                                                                            | 0.27    | Minimum Non-Detect                                              | 0.25   |
| Maximum Detect                                                                                                            | 1.15    | Maximum Non-Detect                                              | 1      |
| Variance Detects                                                                                                          | 0.0902  | Percent Non-Detects                                             | 33.33% |
| Mean Detects                                                                                                              | 0.691   | SD Detects                                                      | 0.3    |
| Median Detects                                                                                                            | 0.739   | CV Detects                                                      | 0.434  |
| Skewness Detects                                                                                                          | -0.0629 | Kurtosis Detects                                                | -1.333 |
| Mean of Logged Detects                                                                                                    | -0.474  | SD of Logged Detects                                            | 0.5    |
| Normal GOF Test on Detects Only                                                                                           |         |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.922   | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                            | 0.874   | Detected Data appear Normal at 5% Significance Level            |        |
| Lilliefors Test Statistic                                                                                                 | 0.171   | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                              | 0.226   | Detected Data appear Normal at 5% Significance Level            |        |
| Detected Data appear Normal at 5% Significance Level                                                                      |         |                                                                 |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                    |         |                                                                 |        |
| KM Mean                                                                                                                   | 0.556   | KM Standard Error of Mean                                       | 0.0723 |
| KM SD                                                                                                                     | 0.314   | 95% KM (BCA) UCL                                                | 0.677  |
| 95% KM (t) UCL                                                                                                            | 0.681   | 95% KM (Percentile Bootstrap) UCL                               | 0.676  |
| 95% KM (z) UCL                                                                                                            | 0.675   | 95% KM Bootstrap t UCL                                          | 0.698  |
| 90% KM Chebyshev UCL                                                                                                      | 0.773   | 95% KM Chebyshev UCL                                            | 0.871  |
| 97.5% KM Chebyshev UCL                                                                                                    | 1.007   | 99% KM Chebyshev UCL                                            | 1.275  |
| Gamma GOF Tests on Detected Observations Only                                                                             |         |                                                                 |        |
| A-D Test Statistic                                                                                                        | 0.617   | Anderson-Darling GOF Test                                       |        |
| 5% A-D Critical Value                                                                                                     | 0.738   | Detected data appear Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                        | 0.21    | Kolmogorov-Smirnov GOF                                          |        |
| 5% K-S Critical Value                                                                                                     | 0.229   | Detected data appear Gamma Distributed at 5% Significance Level |        |
| Detected data appear Gamma Distributed at 5% Significance Level                                                           |         |                                                                 |        |
| Gamma Statistics on Detected Data Only                                                                                    |         |                                                                 |        |
| k hat (MLE)                                                                                                               | 4.906   | k star (bias corrected MLE)                                     | 3.902  |
| Theta hat (MLE)                                                                                                           | 0.141   | Theta star (bias corrected MLE)                                 | 0.177  |
| nu hat (MLE)                                                                                                              | 137.4   | nu star (bias corrected)                                        | 109.3  |
| Mean (detects)                                                                                                            | 0.691   |                                                                 |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                            |         |                                                                 |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                              |         |                                                                 |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20) |         |                                                                 |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                              |         |                                                                 |        |
| This is especially true when the sample size is small.                                                                    |         |                                                                 |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates               |         |                                                                 |        |
| Minimum                                                                                                                   | 0.0478  | Mean                                                            | 0.534  |
| Maximum                                                                                                                   | 1.15    | Median                                                          | 0.423  |
| SD                                                                                                                        | 0.34    | CV                                                              | 0.637  |
| k hat (MLE)                                                                                                               | 2.088   | k star (bias corrected MLE)                                     | 1.821  |
| Theta hat (MLE)                                                                                                           | 0.256   | Theta star (bias corrected MLE)                                 | 0.293  |
| nu hat (MLE)                                                                                                              | 87.69   | nu star (bias corrected)                                        | 76.5   |
| Adjusted Level of Significance (β)                                                                                        | 0.0383  |                                                                 |        |
| Approximate Chi Square Value (76.50, α)                                                                                   | 57.35   | Adjusted Chi Square Value (76.50, β)                            | 56.08  |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                | 0.712   | 95% Gamma Adjusted UCL (use when n<50)                          | 0.728  |
| Estimates of Gamma Parameters using KM Estimates                                                                          |         |                                                                 |        |
| Mean (KM)                                                                                                                 | 0.556   | SD (KM)                                                         | 0.314  |
| Variance (KM)                                                                                                             | 0.0984  | SE of Mean (KM)                                                 | 0.0723 |
| k hat (KM)                                                                                                                | 3.143   | k star (KM)                                                     | 2.726  |
| nu hat (KM)                                                                                                               | 132     | nu star (KM)                                                    | 114.5  |
| theta hat (KM)                                                                                                            | 0.177   | theta star (KM)                                                 | 0.204  |
| 80% gamma percentile (KM)                                                                                                 | 0.802   | 90% gamma percentile (KM)                                       | 1.007  |
| 95% gamma percentile (KM)                                                                                                 | 1.2     | 99% gamma percentile (KM)                                       | 1.619  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                        |         |                                                                 |        |
| Approximate Chi Square Value (114.49, α)                                                                                  | 90.79   | Adjusted Chi Square Value (114.49, β)                           | 89.17  |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                             | 0.701   | 95% Gamma Adjusted KM-UCL (use when n<50)                       | 0.714  |
| Lognormal GOF Test on Detected Observations Only                                                                          |         |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                               | 0.89    | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                            | 0.874   | Detected Data appear Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                 | 0.233   | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                              | 0.226   | Detected Data Not Lognormal at 5% Significance Level            |        |
| Detected Data appear Approximate Lognormal at 5% Significance Level                                                       |         |                                                                 |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                        |         |                                                                 |        |
| Mean in Original Scale                                                                                                    | 0.543   | Mean in Log Scale                                               | -0.803 |
| SD in Original Scale                                                                                                      | 0.328   | SD in Log Scale                                                 | 0.653  |
| 95% t UCL (assumes normality of ROS data)                                                                                 | 0.666   | 95% Percentile Bootstrap UCL                                    | 0.657  |

TABLE B.3  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |         |                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------|--------|
| 95% BCA Bootstrap UCL                                                                                                                     | 0.662   | 95% Bootstrap t UCL                                             | 0.671  |
| 95% H-UCL (Log ROS)                                                                                                                       | 0.758   |                                                                 |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |         |                                                                 |        |
| KM Mean (logged)                                                                                                                          | -0.753  | KM Geo Mean                                                     | 0.471  |
| KM SD (logged)                                                                                                                            | 0.579   | 95% Critical H Value (KM-Log)                                   | 2.064  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.134   | 95% H-UCL (KM -Log)                                             | 0.728  |
| KM SD (logged)                                                                                                                            | 0.579   | 95% Critical H Value (KM-Log)                                   | 2.064  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.134   |                                                                 |        |
| DL/2 Statistics                                                                                                                           |         |                                                                 |        |
| DL/2 Normal                                                                                                                               |         | DL/2 Log-Transformed                                            |        |
| Mean in Original Scale                                                                                                                    | 0.52    | Mean in Log Scale                                               | -0.943 |
| SD in Original Scale                                                                                                                      | 0.355   | SD in Log Scale                                                 | 0.841  |
| 95% t UCL (Assumes normality)                                                                                                             | 0.654   | 95% H-Stat UCL                                                  | 0.863  |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |         |                                                                 |        |
| Detected Data appear Normal Distributed at 5% Significance Level                                                                          |         |                                                                 |        |
| Suggested UCL to Use                                                                                                                      |         |                                                                 |        |
| 95% KM (t) UCL                                                                                                                            | 0.681   |                                                                 |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |         |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |         |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |         |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |         |                                                                 |        |
| result (memphis_chloroform_67-66-3)                                                                                                       |         |                                                                 |        |
| General Statistics                                                                                                                        |         |                                                                 |        |
| Total Number of Observations                                                                                                              | 21      | Number of Distinct Observations                                 | 15     |
| Number of Detects                                                                                                                         | 15      | Number of Non-Detects                                           | 6      |
| Number of Distinct Detects                                                                                                                | 13      | Number of Distinct Non-Detects                                  | 2      |
| Minimum Detect                                                                                                                            | 0.146   | Minimum Non-Detect                                              | 0.125  |
| Maximum Detect                                                                                                                            | 0.295   | Maximum Non-Detect                                              | 0.3    |
| Variance Detects                                                                                                                          | 0.00253 | Percent Non-Detects                                             | 28.57% |
| Mean Detects                                                                                                                              | 0.205   | SD Detects                                                      | 0.0503 |
| Median Detects                                                                                                                            | 0.199   | CV Detects                                                      | 0.246  |
| Skewness Detects                                                                                                                          | 0.972   | Kurtosis Detects                                                | -0.236 |
| Mean of Logged Detects                                                                                                                    | -1.613  | SD of Logged Detects                                            | 0.231  |
| Normal GOF Test on Detects Only                                                                                                           |         |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.848   | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.881   | Detected Data Not Normal at 5% Significance Level               |        |
| Lilliefors Test Statistic                                                                                                                 | 0.187   | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.22    | Detected Data appear Normal at 5% Significance Level            |        |
| Detected Data appear Approximate Normal at 5% Significance Level                                                                          |         |                                                                 |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |         |                                                                 |        |
| KM Mean                                                                                                                                   | 0.185   | KM Standard Error of Mean                                       | 0.0126 |
| KM SD                                                                                                                                     | 0.0544  | 95% KM (BCA) UCL                                                | 0.205  |
| 95% KM (t) UCL                                                                                                                            | 0.206   | 95% KM (Percentile Bootstrap) UCL                               | 0.206  |
| 95% KM (z) UCL                                                                                                                            | 0.205   | 95% KM Bootstrap t UCL                                          | 0.209  |
| 90% KM Chebyshev UCL                                                                                                                      | 0.222   | 95% KM Chebyshev UCL                                            | 0.24   |
| 97.5% KM Chebyshev UCL                                                                                                                    | 0.263   | 99% KM Chebyshev UCL                                            | 0.31   |
| Gamma GOF Tests on Detected Observations Only                                                                                             |         |                                                                 |        |
| A-D Test Statistic                                                                                                                        | 0.718   | Anderson-Darling GOF Test                                       |        |
| 5% A-D Critical Value                                                                                                                     | 0.735   | Detected data appear Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.155   | Kolmogorov-Smirnov GOF                                          |        |
| 5% K-S Critical Value                                                                                                                     | 0.221   | Detected data appear Gamma Distributed at 5% Significance Level |        |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |         |                                                                 |        |
| Gamma Statistics on Detected Data Only                                                                                                    |         |                                                                 |        |
| k hat (MLE)                                                                                                                               | 19.45   | k star (bias corrected MLE)                                     | 15.61  |
| Theta hat (MLE)                                                                                                                           | 0.0105  | Theta star (bias corrected MLE)                                 | 0.0131 |
| nu hat (MLE)                                                                                                                              | 583.6   | nu star (bias corrected)                                        | 468.2  |
| Mean (detects)                                                                                                                            | 0.205   |                                                                 |        |
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |         |                                                                 |        |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |         |                                                                 |        |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |         |                                                                 |        |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |         |                                                                 |        |
| This is especially true when the sample size is small.                                                                                    |         |                                                                 |        |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |         |                                                                 |        |
| Minimum                                                                                                                                   | 0.0709  | Mean                                                            | 0.178  |
| Maximum                                                                                                                                   | 0.295   | Median                                                          | 0.171  |
| SD                                                                                                                                        | 0.0626  | CV                                                              | 0.351  |
| k hat (MLE)                                                                                                                               | 8.055   | k star (bias corrected MLE)                                     | 6.936  |
| Theta hat (MLE)                                                                                                                           | 0.0221  | Theta star (bias corrected MLE)                                 | 0.0257 |
| nu hat (MLE)                                                                                                                              | 338.3   | nu star (bias corrected)                                        | 291.3  |
| Adjusted Level of Significance (β)                                                                                                        | 0.0383  |                                                                 |        |
| Approximate Chi Square Value (291.32, α)                                                                                                  | 252.8   | Adjusted Chi Square Value (291.32, β)                           | 250    |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 0.205   | 95% Gamma Adjusted UCL (use when n<50)                          | 0.208  |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |         |                                                                 |        |
| Mean (KM)                                                                                                                                 | 0.185   | SD (KM)                                                         | 0.0544 |
| Variance (KM)                                                                                                                             | 0.00296 | SE of Mean (KM)                                                 | 0.0126 |
| k hat (KM)                                                                                                                                | 11.53   | k star (KM)                                                     | 9.911  |
| nu hat (KM)                                                                                                                               | 484.1   | nu star (KM)                                                    | 416.3  |



TABLE B.3  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|--------|
| theta hat (KM)                                                                                                                            | 0.016  | theta star (KM)                                                 | 0.0186 |
| 80% gamma percentile (KM)                                                                                                                 | 0.231  | 90% gamma percentile (KM)                                       | 0.263  |
| 95% gamma percentile (KM)                                                                                                                 | 0.291  | 99% gamma percentile (KM)                                       | 0.348  |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |                                                                 |        |
| Approximate Chi Square Value (416.27, $\alpha$ )                                                                                          | 370    | Adjusted Chi Square Value (416.27, $\beta$ )                    | 366.6  |
| 95% Gamma Approximate KM-UCL (use when $n \geq 50$ )                                                                                      | 0.208  | 95% Gamma Adjusted KM-UCL (use when $n < 50$ )                  | 0.21   |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.896  | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.881  | Detected Data appear Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.146  | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.22   | Detected Data appear Lognormal at 5% Significance Level         |        |
| Detected Data appear Lognormal at 5% Significance Level                                                                                   |        |                                                                 |        |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                                 |        |
| Mean in Original Scale                                                                                                                    | 0.182  | Mean in Log Scale                                               | -1.751 |
| SD in Original Scale                                                                                                                      | 0.0575 | SD in Log Scale                                                 | 0.313  |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 0.203  | 95% Percentile Bootstrap UCL                                    | 0.202  |
| 95% BCA Bootstrap UCL                                                                                                                     | 0.202  | 95% Bootstrap t UCL                                             | 0.208  |
| 95% H-UCL (Log ROS)                                                                                                                       | 0.207  |                                                                 |        |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                                 |        |
| KM Mean (logged)                                                                                                                          | -1.73  | KM Geo Mean                                                     | 0.177  |
| KM SD (logged)                                                                                                                            | 0.28   | 95% Critical H Value (KM-Log)                                   | 1.819  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0647 | 95% H-UCL (KM -Log)                                             | 0.207  |
| KM SD (logged)                                                                                                                            | 0.28   | 95% Critical H Value (KM-Log)                                   | 1.819  |
| KM Standard Error of Mean (logged)                                                                                                        | 0.0647 |                                                                 |        |
| DL/2 Statistics                                                                                                                           |        |                                                                 |        |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                            |        |
| Mean in Original Scale                                                                                                                    | 0.168  | Mean in Log Scale                                               | -1.903 |
| SD in Original Scale                                                                                                                      | 0.0746 | SD in Log Scale                                                 | 0.538  |
| 95% t UCL (Assumes normality)                                                                                                             | 0.196  | 95% H-Stat UCL                                                  | 0.22   |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                                 |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |        |
| Detected Data appear Approximate Normal Distributed at 5% Significance Level                                                              |        |                                                                 |        |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |        |
| 95% KM (t) UCL                                                                                                                            | 0.206  |                                                                 |        |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |        |                                                                 |        |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |        |                                                                 |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |        |
| result (memphis_tetrachloroethene_127-18-4)                                                                                               |        |                                                                 |        |
| General Statistics                                                                                                                        |        |                                                                 |        |
| Total Number of Observations                                                                                                              | 21     | Number of Distinct Observations                                 | 17     |
| Number of Detects                                                                                                                         | 15     | Number of Non-Detects                                           | 6      |
| Number of Distinct Detects                                                                                                                | 15     | Number of Distinct Non-Detects                                  | 2      |
| Minimum Detect                                                                                                                            | 0.573  | Minimum Non-Detect                                              | 0.25   |
| Maximum Detect                                                                                                                            | 10.9   | Maximum Non-Detect                                              | 1      |
| Variance Detects                                                                                                                          | 8.493  | Percent Non-Detects                                             | 28.57% |
| Mean Detects                                                                                                                              | 2.67   | SD Detects                                                      | 2.914  |
| Median Detects                                                                                                                            | 1.18   | CV Detects                                                      | 1.092  |
| Skewness Detects                                                                                                                          | 1.919  | Kurtosis Detects                                                | 3.721  |
| Mean of Logged Detects                                                                                                                    | 0.534  | SD of Logged Detects                                            | 0.938  |
| Normal GOF Test on Detects Only                                                                                                           |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.736  | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.881  | Detected Data Not Normal at 5% Significance Level               |        |
| Lilliefors Test Statistic                                                                                                                 | 0.252  | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.22   | Detected Data Not Normal at 5% Significance Level               |        |
| Detected Data Not Normal at 5% Significance Level                                                                                         |        |                                                                 |        |
| Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs                                                    |        |                                                                 |        |
| KM Mean                                                                                                                                   | 1.993  | KM Standard Error of Mean                                       | 0.59   |
| KM SD                                                                                                                                     | 2.61   | 95% KM (BCA) UCL                                                | 3.001  |
| 95% KM (t) UCL                                                                                                                            | 3.011  | 95% KM (Percentile Bootstrap) UCL                               | 2.969  |
| 95% KM (z) UCL                                                                                                                            | 2.963  | 95% KM Bootstrap t UCL                                          | 3.593  |
| 90% KM Chebyshev UCL                                                                                                                      | 3.763  | 95% KM Chebyshev UCL                                            | 4.564  |
| 97.5% KM Chebyshev UCL                                                                                                                    | 5.677  | 99% KM Chebyshev UCL                                            | 7.862  |
| Gamma GOF Tests on Detected Observations Only                                                                                             |        |                                                                 |        |
| A-D Test Statistic                                                                                                                        | 0.871  | Anderson-Darling GOF Test                                       |        |
| 5% A-D Critical Value                                                                                                                     | 0.758  | Detected Data Not Gamma Distributed at 5% Significance Level    |        |
| K-S Test Statistic                                                                                                                        | 0.221  | Kolmogorov-Smirnov GOF                                          |        |
| 5% K-S Critical Value                                                                                                                     | 0.227  | Detected data appear Gamma Distributed at 5% Significance Level |        |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                    |        |                                                                 |        |
| Gamma Statistics on Detected Data Only                                                                                                    |        |                                                                 |        |
| k hat (MLE)                                                                                                                               | 1.256  | k star (bias corrected MLE)                                     | 1.05   |
| Theta hat (MLE)                                                                                                                           | 2.125  | Theta star (bias corrected MLE)                                 | 2.544  |
| nu hat (MLE)                                                                                                                              | 37.69  | nu star (bias corrected)                                        | 31.49  |
| Mean (detects)                                                                                                                            | 2.67   |                                                                 |        |

TABLE B.3  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                         |         |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------|---------|
| Gamma ROS Statistics using Imputed Non-Detects                                                                                            |        |                                                         |         |
| GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs                                              |        |                                                         |         |
| GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)                 |        |                                                         |         |
| For such situations, GROS method may yield incorrect values of UCLs and BTVs                                                              |        |                                                         |         |
| This is especially true when the sample size is small.                                                                                    |        |                                                         |         |
| For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates                               |        |                                                         |         |
| Minimum                                                                                                                                   | 0.01   | Mean                                                    | 1.91    |
| Maximum                                                                                                                                   | 10.9   | Median                                                  | 0.901   |
| SD                                                                                                                                        | 2.732  | CV                                                      | 1.43    |
| k hat (MLE)                                                                                                                               | 0.414  | k star (bias corrected MLE)                             | 0.386   |
| Theta hat (MLE)                                                                                                                           | 4.615  | Theta star (bias corrected MLE)                         | 4.942   |
| nu hat (MLE)                                                                                                                              | 17.38  | nu star (bias corrected)                                | 16.23   |
| Adjusted Level of Significance (β)                                                                                                        | 0.0383 |                                                         |         |
| Approximate Chi Square Value (16.23, α)                                                                                                   | 8.126  | Adjusted Chi Square Value (16.23, β)                    | 7.687   |
| 95% Gamma Approximate UCL (use when n>=50)                                                                                                | 3.815  | 95% Gamma Adjusted UCL (use when n<50)                  | 4.033   |
| Estimates of Gamma Parameters using KM Estimates                                                                                          |        |                                                         |         |
| Mean (KM)                                                                                                                                 | 1.993  | SD (KM)                                                 | 2.61    |
| Variance (KM)                                                                                                                             | 6.814  | SE of Mean (KM)                                         | 0.59    |
| k hat (KM)                                                                                                                                | 0.583  | k star (KM)                                             | 0.532   |
| nu hat (KM)                                                                                                                               | 24.49  | nu star (KM)                                            | 22.33   |
| theta hat (KM)                                                                                                                            | 3.418  | theta star (KM)                                         | 3.75    |
| 80% gamma percentile (KM)                                                                                                                 | 3.281  | 90% gamma percentile (KM)                               | 5.324   |
| 95% gamma percentile (KM)                                                                                                                 | 7.492  | 99% gamma percentile (KM)                               | 12.79   |
| Gamma Kaplan-Meier (KM) Statistics                                                                                                        |        |                                                         |         |
| Approximate Chi Square Value (22.33, α)                                                                                                   | 12.58  | Adjusted Chi Square Value (22.33, β)                    | 12.02   |
| 95% Gamma Approximate KM-UCL (use when n>=50)                                                                                             | 3.537  | 95% Gamma Adjusted KM-UCL (use when n<50)               | 3.702   |
| Lognormal GOF Test on Detected Observations Only                                                                                          |        |                                                         |         |
| Shapiro Wilk Test Statistic                                                                                                               | 0.901  | Shapiro Wilk GOF Test                                   |         |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.881  | Detected Data appear Lognormal at 5% Significance Level |         |
| Lilliefors Test Statistic                                                                                                                 | 0.198  | Lilliefors GOF Test                                     |         |
| 5% Lilliefors Critical Value                                                                                                              | 0.22   | Detected Data appear Lognormal at 5% Significance Level |         |
| Detected Data appear Lognormal at 5% Significance Level                                                                                   |        |                                                         |         |
| Lognormal ROS Statistics Using Imputed Non-Detects                                                                                        |        |                                                         |         |
| Mean in Original Scale                                                                                                                    | 1.978  | Mean in Log Scale                                       | -0.0551 |
| SD in Original Scale                                                                                                                      | 2.684  | SD in Log Scale                                         | 1.271   |
| 95% t UCL (assumes normality of ROS data)                                                                                                 | 2.989  | 95% Percentile Bootstrap UCL                            | 3.028   |
| 95% BCA Bootstrap UCL                                                                                                                     | 3.215  | 95% Bootstrap t UCL                                     | 3.687   |
| 95% H-UCL (Log ROS)                                                                                                                       | 4.911  |                                                         |         |
| Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution                                                          |        |                                                         |         |
| KM Mean (logged)                                                                                                                          | 0.0167 | KM Geo Mean                                             | 1.017   |
| KM SD (logged)                                                                                                                            | 1.135  | 95% Critical H Value (KM-Log)                           | 2.753   |
| KM Standard Error of Mean (logged)                                                                                                        | 0.258  | 95% H-UCL (KM -Log)                                     | 3.896   |
| KM SD (logged)                                                                                                                            | 1.135  | 95% Critical H Value (KM-Log)                           | 2.753   |
| KM Standard Error of Mean (logged)                                                                                                        | 0.258  |                                                         |         |
| DL/2 Statistics                                                                                                                           |        |                                                         |         |
| DL/2 Normal                                                                                                                               |        | DL/2 Log-Transformed                                    |         |
| Mean in Original Scale                                                                                                                    | 1.961  | Mean in Log Scale                                       | -0.147  |
| SD in Original Scale                                                                                                                      | 2.697  | SD in Log Scale                                         | 1.383   |
| 95% t UCL (Assumes normality)                                                                                                             | 2.976  | 95% H-Stat UCL                                          | 5.908   |
| DL/2 is not a recommended method, provided for comparisons and historical reasons                                                         |        |                                                         |         |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                         |         |
| Detected Data appear Approximate Gamma Distributed at 5% Significance Level                                                               |        |                                                         |         |
| Suggested UCL to Use                                                                                                                      |        |                                                         |         |
| 95% KM Adjusted Gamma UCL                                                                                                                 | 3.702  | 95% GROS Adjusted Gamma UCL                             | 4.033   |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |        |                                                         |         |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |        |                                                         |         |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                         |         |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                         |         |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                         |         |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                         |         |
| result (memphis_trichloroethene_79-01-6)                                                                                                  |        |                                                         |         |
| General Statistics                                                                                                                        |        |                                                         |         |
| Total Number of Observations                                                                                                              | 21     | Number of Distinct Observations                         | 21      |
|                                                                                                                                           |        | Number of Missing Observations                          | 0       |
| Minimum                                                                                                                                   | 0.353  | Mean                                                    | 1.657   |
| Maximum                                                                                                                                   | 3.15   | Median                                                  | 1.6     |
| SD                                                                                                                                        | 0.962  | Std. Error of Mean                                      | 0.21    |
| Coefficient of Variation                                                                                                                  | 0.581  | Skewness                                                | 0.166   |
| Normal GOF Test                                                                                                                           |        |                                                         |         |
| Shapiro Wilk Test Statistic                                                                                                               | 0.916  | Shapiro Wilk GOF Test                                   |         |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.908  | Data appear Normal at 5% Significance Level             |         |
| Lilliefors Test Statistic                                                                                                                 | 0.138  | Lilliefors GOF Test                                     |         |
| 5% Lilliefors Critical Value                                                                                                              | 0.188  | Data appear Normal at 5% Significance Level             |         |
| Data appear Normal at 5% Significance Level                                                                                               |        |                                                         |         |
| Assuming Normal Distribution                                                                                                              |        |                                                         |         |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                        |         |

TABLE B.3  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - MEMPHIS AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                                 |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|
| 95% Student's-t UCL                                                                                                                       | 2.019  | 95% Adjusted-CLT UCL (Chen-1995)                                | 2.01  |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                               | 2.02  |
| Gamma GOF Test                                                                                                                            |        |                                                                 |       |
| A-D Test Statistic                                                                                                                        | 0.63   | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                     | 0.751  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.142  | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                     | 0.191  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |       |
| Gamma Statistics                                                                                                                          |        |                                                                 |       |
| k hat (MLE)                                                                                                                               | 2.533  | k star (bias corrected MLE)                                     | 2.203 |
| Theta hat (MLE)                                                                                                                           | 0.654  | Theta star (bias corrected MLE)                                 | 0.752 |
| nu hat (MLE)                                                                                                                              | 106.4  | nu star (bias corrected)                                        | 92.51 |
| MLE Mean (bias corrected)                                                                                                                 | 1.657  | MLE Sd (bias corrected)                                         | 1.116 |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                             | 71.33 |
| Adjusted Level of Significance                                                                                                            | 0.0383 | Adjusted Chi Square Value                                       | 69.9  |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 2.149  | 95% Adjusted Gamma UCL (use when n<50)                          | 2.193 |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.902  | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.908  | Data Not Lognormal at 5% Significance Level                     |       |
| Lilliefors Test Statistic                                                                                                                 | 0.147  | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.188  | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Approximate Lognormal at 5% Significance Level                                                                                |        |                                                                 |       |
| Lognormal Statistics                                                                                                                      |        |                                                                 |       |
| Minimum of Logged Data                                                                                                                    | -1.041 | Mean of logged Data                                             | 0.295 |
| Maximum of Logged Data                                                                                                                    | 1.147  | SD of logged Data                                               | 0.717 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |       |
| 95% H-UCL                                                                                                                                 | 2.476  | 90% Chebyshev (MVUE) UCL                                        | 2.573 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 2.963  | 97.5% Chebyshev (MVUE) UCL                                      | 3.505 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 4.569  |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |       |
| 95% CLT UCL                                                                                                                               | 2.002  | 95% Jackknife UCL                                               | 2.019 |
| 95% Standard Bootstrap UCL                                                                                                                | 1.993  | 95% Bootstrap-t UCL                                             | 2.04  |
| 95% Hall's Bootstrap UCL                                                                                                                  | 2.005  | 95% Percentile Bootstrap UCL                                    | 1.997 |
| 95% BCA Bootstrap UCL                                                                                                                     | 2.016  |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 2.287  | 95% Chebyshev(Mean, Sd) UCL                                     | 2.572 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 2.968  | 99% Chebyshev(Mean, Sd) UCL                                     | 3.747 |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |       |
| 95% Student's-t UCL                                                                                                                       | 2.019  |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |       |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                             | ProCUL Result (ug/L) | ProCUL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 10                   | 0           | HW-05-05  | HW-05-05-EBT-11_20130211            | 2/11/2013   | 2/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 10                     |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 5                    | 0           | HW-01-04B | HW-01-04B-EBT-11_20140507           | 5/1/2014    | 5/1/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 5                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101T   | MW-101T_1W101-07C-EBT-14_20131012   | 10/12/2013  | 10/12/2013    | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | HW-01-04B | HW-01-04B_1W101-04B-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 4                    | 0           | HW-05-05  | HW-05-05-EBT-14_20131106            | 11/6/2013   | 11/6/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 4                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-04B | HW-01-04B_1W101-04B-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/21/2014   | 4/21/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-104    | MW-104_1W104-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 5                    | 0           | HW-05-05  | HW-05-05-EBT-15_20140205            | 2/5/2014    | 2/5/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 5                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-104    | MW-104_1W104-LB-22_20150106         | 10/6/2015   | 10/6/2015     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-12_20130507 | 5/7/2013    | 5/7/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-04B | HW-01-04B_1W101-04B-EBT-18_20141108 | 11/6/2014   | 11/6/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-14_20131108 | 11/8/2014   | 11/8/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 4                    | 0           | HW-01-07C | HW-01-07C_1W101-07C-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 4                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1                    | 0           | HW-05-05  | HW-05-05-EBT-17_20140512            | 5/12/2014   | 5/12/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07B | HW-01-07B_1W101-07B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07B | HW-01-07B_1W101-07B-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | HW-01-01A | HW-01-01A_1W101-01A-EBT-11_20130205 | 2/5/2013    | 2/5/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07A | HW-01-07A_1W101-07A-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-05-05  | HW-05-05-EBT-17_20140512            | 5/12/2014   | 5/12/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07B | HW-01-07B_1W101-07B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1                    | 0           | HW-05-05  | HW-05-05-EBT-18_20141108            | 11/8/2014   | 11/8/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 10                   | 0           | HW-05-05  | HW-05-05-EBT-14_20131107            | 11/7/2013   | 11/7/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 10                     |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07A | HW-01-07A_1W101-07A-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07A | HW-01-07A_1W101-07A-EBT-16_20140509 | 5/9/2013    | 5/9/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07A | HW-01-07A_1W101-07A-EBT-12_20130511 | 5/11/2013   | 5/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07A | HW-01-07A_1W101-07A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | HW-01-07A | HW-01-07A_1W101-07A-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.5                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | HW-01-03A | HW-01-03A_1W101-03A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-101B   | MW-101B_1W101B-LB-20_20140120       | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1                                 |                      |             |           |                                     |             |               |                      |        |            |                           |         |           |                        |

TABLE B.4  
PROJUL.S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| PROJUL Group                            | PROJUL Result (ug/L) | PROJUL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|---------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-L-25_20150419   | 4/19/2015   | 4/19/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-203B  | MW-203B_MW-203B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-L-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-203B  | MW-203B_MW-203B-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-206A  | MW-206A_MW-206A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LA-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LA-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-L-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-206A  | MW-206A_MW-206A-L-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-L-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-206A  | MW-206A_MW-206A-L-25_20141021   | 4/10/2014   | 4/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-203B  | MW-203B_MW-203B-L-25_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.5                  | 0           | MW-143   | MW-143_MW-143-L-17_20130411     | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-206A  | MW-206A_MW-206A-L-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-L-19_20140426     | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-204A  | MW-204A_MW-204A-L-19_20140425   | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-L-21_20150408     | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-L-23_20160423     | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-L-25_20170427     | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-206A  | MW-206A_MW-206A-L-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-L-19_20140425     | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-L-25_20170420     | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-199B  | MW-199B_MW-199B-L-17_20131010   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-199B  | MW-199B_MW-199B-L-19_20140426   | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-L-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-L-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-199B  | MW-199B_MW-199B-L-21_20150409   | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-L-21_20150409   | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-L-21_20150409     | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-L-23_20160425   | 4/25/2016   | 4/25/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-199B  | MW-199B_MW-199B-L-25_20141021   | 4/10/2014   | 4/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-L-15_20141021     | 4/10/2014   | 4/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-L-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-205B  | MW-205B_MW-205B-L-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-200   | MW-200_MW-200-L-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-199B  | MW-199B_MW-199B-L-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-203   |                                 |             |               |                     |        |            |                           |         |           |                        |

TABLE B.4  
PROJULS 1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                             | ProCUL Result (ug/L) | ProCUL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method  | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|--------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-16_20121020          | 10/20/2012  | 10/20/2012    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-20_20121019          | 10/19/2012  | 10/19/2012    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1.1                  | 0           | MW-211   | MW-211_EBT-14_20140905          | 8/5/2011    | 8/5/2011      | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | UJ        | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1.46                 | 1           | MW-218   | MW-218_MW-218-L5-25_20170419    | 4/19/2017   | 4/19/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2108  | MW-2108_MW-2108-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-219   | MW-219_MW-219-L5-25_20170422    | 4/22/2017   | 4/22/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-16_20120423          | 4/23/2012   | 4/23/2012     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1                    | 0           | MW-213   | MW-213_MW-213-L5-25_20170421    | 4/21/2017   | 4/21/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-17_20130410          | 4/10/2013   | 4/10/2013     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-219   | MW-219_LB-24_20161016           | 10/16/2016  | 10/16/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-16_20120423          | 4/23/2012   | 4/23/2012     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2098  | MW-2098_LB-24_20161014          | 10/13/2016  | 10/13/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1.11                 | 1           | MW-218   | MW-218_LB-24_20161015           | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | MW-213   | MW-213_MW-213-L5-25_20160424    | 4/24/2016   | 4/24/2016     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2158  | MW-2158_LB-24_20161014          | 10/14/2016  | 10/14/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2098  | MW-2098_LB-16_20121020          | 10/20/2012  | 10/20/2012    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-219   | MW-219_MW-219-L5-21_20150410    | 4/10/2015   | 4/10/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-EBT-15_20140211   | 2/11/2014   | 2/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-23_20160421          | 4/21/2016   | 4/21/2016     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.737                | 1           | MW-218   | MW-218_LB-20_20141020           | 10/20/2014  | 10/20/2014    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | J         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-L5-25_20170421    | 4/21/2017   | 4/21/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2158  | MW-2158_LB-24_20151008          | 10/8/2015   | 10/8/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2098  | MW-2098_LB-24_20131011          | 10/11/2013  | 10/11/2013    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-15-25_20170420       | 4/20/2017   | 4/20/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 1.3                  | 1           | MW-218   | MW-218_MW-218-L5-17_20130410    | 4/10/2013   | 4/10/2013     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-EBT-13_20130820   | 8/20/2013   | 8/20/2013     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-EBT-11_20130211   | 2/11/2013   | 2/11/2013     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.207                | 1           | MW-217   | MW-217_MW-217-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | J         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-21    | MW-21_MW-21-EBT-14_20131108     | 11/8/2013   | 11/8/2013     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-16_20121020          | 4/23/2012   | 4/23/2012     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2108  | MW-2108_MW-2108-L5-21_20130410  | 4/10/2013   | 4/10/2013     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-2068  | MW-2068_LB-15-21_20150409       | 4/9/2015    | 4/9/2015      | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-219   | MW-219_MW-219-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-22    | MW-22_MW-22-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.704                | 1           | MW-64    | MW-64_MW-64-L5-17_20120119      | 4/10/2014   | 4/10/2014     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.257                | 1           | MW-259   | MW-259_MW-259-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | J         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-52    | MW-52_MW-52-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-270   | MW-270_MW-270-SRHPase1_20150515 | 5/15/2015   | 5/15/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-L5-21_20130101      | 10/19/2013  | 10/19/2013    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-L5-25_20120421      | 4/21/2012   | 4/21/2012     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-85    | MW-85_MW-85-EBT-16_20140511     | 5/11/2014   | 5/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-271   | MW-271_MW-271-LB-24_20151007    | 10/7/2015   | 10/7/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-260   | MW-260_LB-24_20161015           | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.43                 | 1           | MW-64    | MW-64_MW-64-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | J         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-26    | MW-26_MW-26-L5-23_20160421      | 4/21/2016   | 4/21/2016     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-257   | MW-257_MW-257-L5-25_20120423    | 4/23/2012   | 4/23/2012     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LB-24_20161014      | 10/14/2016  | 10/14/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-263   | MW-263_MW-263-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-271   | MW-271_MW-271-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-258   | MW-258_MW-258-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-258   | MW-258_MW-258-L5-25_20170420    | 4/20/2017   | 4/20/2017     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 2                    | 0           | MW-62    | MW-62_MW-62-EBT-17_20140810     | 8/10/2014   | 8/10/2014     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | UJ        | 2                      |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-52    | MW-52_MW-52-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-271   | MW-271_MW-271-SRHPase1_20150516 | 5/16/2015   | 5/16/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-88    | MW-88_MW-88-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-85    | MW-85_MW-85-EBT-17_20140810     | 8/10/2014   | 8/10/2014     | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-88    | MW-88_MW-88-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,1,2,2-tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1.1.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | M        |                                 |             |               |                    |        |            |                           |         |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                            | ProCUL Result (ug/L) | ProCUL Flag | Location   | Sample ID                               | Sample Date | Analysis Date | Analytical Method  | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------------|----------------------|-------------|------------|-----------------------------------------|-------------|---------------|--------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07A | PWW101-07A, PWW101-07A-LS-25, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-03   | PWW21-03, PWW21-03-LS-21, 20150408      | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06A | PWW101-06A, PWW101-06A-LS-21, 20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-LS-25, 20170419            | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07A | PWW101-07A, PWW101-07A-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03A | PWW101-03A, PWW101-03A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-03   | PWW21-03, PWW21-03-LB-20, 20150408      | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-97      | MW-97, MW97-LS-21, 20150409             | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-LS-15, 20120422  | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03B | PWW101-03B, PWW101-03B-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.569                | 1           | MW-94A     | MW-94A, MW-94A-LS-19, 20140425          | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-04   | PWW21-04, PWW21-04-EBT-18, 20141016     | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03B | PWW101-03B, PWW101-03B-LA-22, 20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03A | PWW101-03A, PWW101-03A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-03   | PWW21-03, PWW21-03-LA-22, 20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07B | PWW101-07B, PWW101-07B-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03A | PWW101-03A, PWW101-03A-LS-21, 20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-05   | PWW21-05, PWW21-05-LA-18, 20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-04   | PWW21-04, PWW21-04-EBT-1A, 20131108     | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06A | PWW101-06A, PWW101-06A-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-02B | PWW101-02B, PWW101-02B-LS-25, 20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-98      | MW-98, MW-98-LA-18, 20131011            | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-03   | PWW21-03, PWW21-03-LB-16, 20121019      | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-11, 20130815 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06A | PWW101-06A, PWW101-06A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-92      | MW-92, MW92-LA-22, 20150409             | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-94A     | MW-94A, MW-94A-LB-24, 20161015          | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-14, 20131101 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03A | PWW101-03A, PWW101-03A-LA-22, 20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-04   | PWW21-04, PWW21-04-EBT-1A, 20131108     | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-04   | PWW21-04, PWW21-04-LS-25, 20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-96      | MW-96, MW-96-LB-24, 20161015            | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03A | PWW101-03A, PWW101-03A-LB-20, 20141018  | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-LS-16, 20121017            | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-03A | PWW101-03A, PWW101-03A-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.5                  | 0           | PWW21-03   | PWW21-03, PWW21-03-LS-17, 20130411      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06B | PWW101-06B, PWW101-06B-LS-21, 20140507  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-LS-15, 20120423            | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06B | PWW101-06B, PWW101-06B-LS-21, 20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06B | PWW101-06B, PWW101-06B-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-94A     | MW-94A, MW-94A-LS-25, 20170420          | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-12, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-04   | PWW21-04, PWW21-04-EBT-15, 20140208     | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW21-04   | PWW21-04, PWW21-04-EBT-16, 20140507     | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-06B | PWW101-06B, PWW101-06B-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-LB-24, 20161014            | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-LS-23, 20160421            | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_11.2.2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1,2,2                   |         |           |                        |



TABLE B-4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                             | ProCUL Result (ug/L) | ProCUL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-11_20141020         | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-11_20130206         | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-2     | DR1-2_DR1-2-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5A    | DR1-5A_DR1-5A-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-1A    | DR1-1A_DR1-1A-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-3     | DR2-3_DR2-3-L5-25_20170419          | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | DR2-5     | DR2-5_DR2-5-LB-24_20161017          | 10/17/2016  | 10/17/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-02A | WI101-02A_DR2-2-EBT-14_20141106     | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | DR2-2     | DR2-2_DR2-2-EBT-14_20131109         | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-4     | DR2-4_DR2-4-LB-20_20141020          | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-1     | DR2-1_DR2-1-L5-21_20150410          | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-7     | DR1-7_DR1-7-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-6     | DR2-6_DR2-6-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-2     | DR1-2_DR1-2-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-12_20130512         | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-5     | DR2-5_DR2-5-LB-23_20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-5     | DR2-5_DR2-5-EBT-13_20130814         | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-14_20131109       | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.5                  | 0           | DR1-3     | DR1-3_DR1-3-L5-17_20130411          | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-3     | DR2-3_DR2-3-LA-22_20151006          | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-18_20140508       | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-1     | DR2-1_DR2-1-L5-23_20150410          | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-6     | DR2-6_DR2-6-L5-15_20120423          | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-1A    | DR1-1A_DR1-1A-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-6A    | DR1-6A_DR1-6A-L5-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 4                    | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 4                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-13_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | DR2-5     | DR2-5_DR2-5-EBT-14_20131105         | 11/5/2013   | 11/5/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-L5-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LB-24_20161016          | 10/16/2016  | 10/16/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI1-5     | DR1-5_DR1-5-EBT-16_20140508         | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-13_20130816       | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | DR2-2     | DR2-2_DR2-2-EBT-13_20130814         | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR2-4     | DR2-4_DR2-4-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-L5-23_20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-L5-15_20120422          | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-17_20140807       | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-LB-16_20121021          | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | DR2-5     | DR2-5_DR2-5-EBT-15_20140210         | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-18_20141106         | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 2                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-17_20140806         | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | DR1-8     | DR1-8_DR1-8-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-13_201308   |             |               |                      |        |            |                           |         |           |                        |

TABLE B.4  
PROJUL161 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                             | ProUCL Result (ug/L) | ProUCL Flag | Location  | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------------|----------------------|-------------|-----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-21-05 | PMW21-05_PMW21-05-LS-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-92-03 | PMW92-03_PMW92-03-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1                    | 0           | PMW-92-03 | PMW92-03_PMW92-03-EBT-12_20130509 | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-92-03 | PMW92-03_PMW92-03-EBT-11_20130320 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-92-02 | PMW92-02_PMW92-02-LS-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-92-02 | PMW92-02_PMW92-02-LA-18_20130102  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-92-03 | PMW92-03_PMW92-03-EBT-18_20140211 | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 1                      |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-11_20130320 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-11_20130313 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-01 | PMW85-01_PMW85-01-LS-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-14_20130106 | 1/6/2013    | 1/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-01 | PMW85-01_PMW85-01-EBT-16_20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-01 | PMW85-01_PMW85-01-LS-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-01 | PMW85-01_PMW85-01-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-01 | PMW85-01_PMW85-01-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-18_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-01 | PMW85-01_PMW-85-01-LB-24_20160105 | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-92-06 | PMW92-06_PMW92-06-LS-20150204     | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-LB-16_20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.2                  | 0           | PMW-85-05 | PMW85-05_PMW85-05-EBT-16_20140512 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.2                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 10                   | 0           | W121-03B  | W121-03B_W121-03B-EBT-17_20140809 | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 10                     |
| Fluval_1,1-Dichloroethane_75-35-4        | 5                    | 0           | W121-03B  | W121-03B_W121-03B-EBT-12_20130511 | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 5                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | UJ        | 5                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-02B  | W121-02B_W121-02B-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LB-20_20140108   | 10/13/2014  | 10/13/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 10                   | 0           | W121-03B  | W121-03B_W121-03B-EBT-11_20130307 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 10                     |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.504                | 1           | MMW-100B  | MMW-100B_MMW100B-LS-25_20170420   | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | J         | 0.504                  |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LS-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-13_20140210 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-02B  | W121-02B_W121-02B-EBT-12_20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-02B  | W121-02B_W121-02B-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 5                    | 0           | W121-03B  | W121-03B_W121-03B-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 5                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-101T  | MMW-101T_MMW101T-LS-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-101T  | MMW-101T_MMW101T-LS-18_20140210   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 1                    | 0           | W121-03B  | W121-03B_W121-03B-EBT-15_20140206 | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 1                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 5                    | 0           | W121-03B  | W121-03B_W121-03B-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 5                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 5                    | 0           | W121-03B  | W121-03B_W121-03B-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 5                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03A  | W121-03A_W121-03A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LB-20_20140108   | 10/13/2014  | 10/13/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.25                 | 1           | MMW-103   | MMW-103_MMW103-LA-18_20130102     | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LB-20_20140108   | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03A  | W121-03A_W121-03A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | UJ        | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-02B  | W121-02B_W121-02B-EBT-17_20140809 | 4/8/2014    | 4/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-02B  | W121-02B_W121-02B-EBT-18_20141105 | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03A  | W121-03A_W121-03A-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LA-22_20150107   | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-17_20140809 | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LS-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-03A  | W121-03A_W121-03A-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 2.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 1                    | 0           | MMW-101T  | MMW-101T_MMW101T-LS-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 1                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-18_20141105 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.872                | 1           | MMW-100B  | MMW-100B_MMW100B-LB-16_20120119   | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | J         | 0.872                  |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | MMW-100B  | MMW-100B_MMW100B-LS-19_20140426   | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 5                    | 0           | W121-03A  | W121-03A_W121-03A-EBT-18_20141105 | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 5                      |
| Fluval_1,1-Dichloroethane_75-35-4        | 0.5                  | 0           | W121-03A  | W121-03A_W121-03A-EBT-15_20140206 | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethane        | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethane_75-35-4        | 2.5                  | 0           | W121-03B  | W121-03B_W121-03B-EBT-15_20140206 | 8/5/20      |               |                     |        |            |                           |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Notes:  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                      | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | W101-04C | W101-04C_W101-04C-EBT-16_20131111 | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | W101-05C | W101-05C_W101-05C-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 2.5                  | 0           | W101-02A | W101-02A_W101-02A-EBT-17_20140805 | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | W101-05C | W101-05C_W101-05C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 1                    | 0           | W101-02A | W101-02A_W101-02A-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 2.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | W101-05C | W101-05C_W101-05C-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | W101-07A | W101-07A_W101-07A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 25                   | 0           | W101-04C | W101-04C_W101-04C-EBT-16_20130510 | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 25                     |
| Fluval_1.1-Dichloroethene_75-35-4 | 1                    | 0           | W101-01B | W101-01B_W101-01B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | W101-02A | W101-02A_W101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-198   | MW-198_W198-LB-22_20150409        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-198   | MW-198_W198-LB-16_20121022        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-200   | MW-200_MW-200-LB-21_20150409      | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 2.5                  | 0           | MW-113   | MW-113_MW-113-EBT-18_20141111     | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 2.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 10                   | 0           | MW-113   | MW-113_MW-113-EBT-13_20130813     | 8/13/2013   | 8/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 10                     |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-206A  | MW-206A_MW-206A-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-197B  | MW-197B_MW-197B-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-15_20120421      | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-200   | MW-200_MW-200-LB-19_20140426      | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-206A  | MW-206A_MW-206A-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | MW-203B  | MW-203B_MW-203B-EBT-18_20141109   | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-24_20131013    | 10/13/2013  | 10/13/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-16_20121022      | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-198   | MW-198_W198-LB-16_20121022        | 10/14/2018  | 10/14/2018    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-16_20140510   | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-198   | MW-198_MW-198-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-197B  | MW-197B_MW-197B-LB-23_20160425    | 4/25/2016   | 4/25/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 1.25                 | 0           | MW-203B  | MW-203B_MW-203B-EBT-17_20140810   | 8/10/2013   | 8/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 1.25                   |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-206B  | MW-206B_MW-206B-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-200   | MW-200_MW-200-LB-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-EBT-18_20141111     | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-11_20130208   | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LB-19_20170421    | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | MW-113   | MW-113_MW-113-EBT-15_20140210     | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LB-19_20140425    | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LB-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-17_20131011    | 10/10/2013  | 10/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 5                    | 0           | MW-113   | MW-113_MW-113-EBT-14_20131106     | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-200   | MW-200_MW-200-LB-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-19_20140426    | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-24_20131013    | 10/13/2013  | 10/13/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-14_20131017   | 11/17/2013  | 11/17/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-15_20140210   | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LB-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-198   | MW-198_W198-LB-20_20140422        | 4/22/2014   | 4/22/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-198   | MW-198_W198-LB-20_20140109        | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-206B  | MW-206B_MW-206B-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-203B  | MW-203B_MW-203B-EBT-12_20130511   | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-21_20130511      | 4/21/2013   | 4/21/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1.1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        |                    |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Notes:  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                          | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID              | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (µg/L) |
|---------------------------------------|----------------------|-------------|----------|------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.61                 | 1           | MW-2158  | MW-2158_LW-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | J         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-217   | MW-217_LW-15_20140423  | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-212   | MW-212-LB-15_20140423  | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-212   | MW-212-EBT-11_20130211 | 2/11/2013   | 2/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LW-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LW-22_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.08                 | 1           | MW-218   | MW-218_LB-24_20161015  | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LW-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | MW-21    | MW-21-EBT-16_20140507  | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 9                      |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-219   | MW-219_LB-16_20150410  | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.893                | 0           | MW-218   | MW-218_LB-15_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LW-18_20131012 | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2108  | MW-2108_LW-15_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-21    | MW-21-EBT-14_2013108   | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-22    | MW-22-LB-24_20161011   | 10/16/2016  | 10/16/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LW-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-212   | MW-212-EBT-13_20130820 | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-212   | MW-212_LB-15_20120422  | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.65                 | 1           | MW-213   | MW-213_LB-14_20161012  | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LW-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-21    | MW-21-EBT-11_20130207  | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-219   | MW-219_LB-16_20120101  | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LW-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1                    | 1           | MW-218   | MW-218_LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.973                | 1           | MW-2078  | MW-2078_LW-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | J         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-217   | MW-217_LW-15_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2108  | MW-2108_LB-23_20141429 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-212   | MW-212-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-219   | MW-219_LB-25_20170422  | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-216   | MW-216_LA-18_20130111  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LB-16_20121020 | 10/11/2012  | 10/11/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.36                 | 1           | MW-218   | MW-218_LB-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-219   | MW-219_LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-217   | MW-217-LB-20_20140102  | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LB-20_20141008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | MW-213   | MW-213-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 5                      |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-219   | MW-219_LB-15_20140426  | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.934                | 1           | MW-218   | MW-218_LB-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | J         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.955                | 1           | MW-218   | MW-218_LB-15_20140423  | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | J         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LW-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-217   | MW-217_LB-15_20140424  | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2108  | MW-2108_LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.65                 | 1           | MW-213   | MW-213_LB-16_20161012  | 10/20/2016  | 10/20/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1                    | 0           | MW-2078  | MW-2078_LW-17_20130411 | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2158  | MW-2158_LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-217   | MW-217_LB-24_20161015  | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.75                 | 0           | MW-219   | MW-219_LB-22_20151007  | 5/23/2015   | 5/23/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-217   | MW-217_LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-21    | MW-21-EBT-12_20130510  | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2068  | MW-2068_LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LB-23_20141020 | 4/22/2014   | 4/22/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LW-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | MW-213   | MW-213-LB-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-2078  | MW-2078_LW-15_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-213   | MW-213-LB-25_20170421  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-85    | MW-85-EBT-12_20130510  | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.09                 | 1           | MW-64    | MW-64_LB-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-85    | MW-85-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 25                   | 0           | MW-62    | MW-62-EBT-11_20130211  | 2/11/2013   | 2/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 25                     |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 2.28                 | 1           | MW-258   | MW-258-LB-24_20161015  | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.28                   |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-26    | MW-26-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-26    | MW-26_LB-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | MW-52    | MW-52-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluoride, 1,1-Dichloroethene, 75-35-4 | 1.75                 | 0           | MW-258   | MW-258-LA-22_20151007  | 10/7/201    |               |                      |        |            |                    |         |           |                        |

TABLE B.4  
PROJCL 1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                      | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                             | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|------------|---------------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-63B     | MW-63B_MW-63B-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-88      | MW-88_MW88-LA-22_20151007             | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 2.21                 | 1           | MW-258     | MW-258_MW-258-LB-24_20131019          | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-261     | MW-261_MW-261-LS-21_20150409          | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-63B     | MW-63B_MW-63B-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-259     | MW-259_MW-259-LS-17_20130410          | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 1.13                 | 1           | MW-287     | MW-287_MW-287-LB-25_20170419          | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-88      | MW-88_MW-88-LB-23_20160421            | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 1                    | 0           | MW-257     | MW-257_MW-257-LS-17_20130411          | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval_1,1-Dichloroethene_75-35-4 | 13.6                 | 1           | MW-263     | MW-263_MW-263-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-96      | MW-96_MW-96-LB-24_20161015            | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 1                    | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-92      | MW-92_MW-92-LB-15_20120423            | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06B | PMW101-06B_PMW101-06B-LB-16_20151007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06B | PMW101-06B_PMW101-06B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-04B | PMW101-04B_PMW101-04B-LB-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-19_20150408      | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-96      | MW-96_MW-96-LA-18_20131011            | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-07B-EBT-18_20131012 | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-96      | MW-96_MW-96-LB-16_20121019            | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-21_20150408  | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06B | PMW101-06B_PMW101-06B-LB-19_20130207  | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-04   | PMW21-04_PMW21-04_20160605            | 6/6/2016    | 6/6/2016      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-04B | PMW101-04B_PMW101-04B-LB-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-96      | MW-96_MW-96-LB-24_20161014            | 10/20/2016  | 10/20/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-06A | PMW101-06A_PMW101-06A-LB-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 1                    | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-14_20131107     | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-92      | MW-92_MW-92-LB-15_20120424            | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 2.5                  | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-15_20170420     | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-LB-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 1                    | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-15_20120423          | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LA-22_20151008          | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 2.5                  | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 2.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-19_20150408      | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-LB-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-LB-23_20160424  | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-20_20141020          | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-LB-19_20141108  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-11_20130205     | 2/5/2013    | 2/5/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-LB-11_20130205      | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-16_20140508     | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | MW-92      | MW-92_MW-92-LB-23_20160420            | 4/20/2016   | 4/20/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-18_20140206     | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-14_20131108     | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-18_20141105     | 11/5/2014   | 11/5/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-13_20130818     | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 2.5                  | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-16_20140507     | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 2.5                    |
| Fluval_1,1-Dichloroethene_75-35-4 | 0.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-12_20130410     | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
|                                   |                      |             |            |                                       |             |               |                      |        |            |                    |         |           |                        |

TABLE B-4  
PROCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (ug/L) | ProUCL Flag | Location  | Sample ID                             | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|-----------|---------------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | DR1-5     | DR1-5, DR1-5-EBT-17, 20140806         | 8/6/2014    | 8/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-2     | DR2-2, DR2-2-LB-16, 20121022          | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 10                   | 0           | DR2-5     | DR2-5, DR2-5-EBT-18, 20141111         | 11/11/2014  | 11/12/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 10                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | DR2-2     | DR2-2, DR2-2-EBT-15, 20140210         | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 25                   | 0           | WI101-03C | WI101-03C, WI101-03C-EBT-15, 20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 25                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-03C | WI101-03C, WI101-03C-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 1.4                  | 0           | DR1-8     | DR1-8, DR1-8-LB-20, 20141018          | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | DR1-5     | DR1-5, DR1-5-EBT-12, 20130512         | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | DR2-2     | DR2-2, DR2-2-EBT-18, 20141110         | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-6     | DR2-6, DR2-6-LB-24, 20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | WI101-03C | WI101-03C, WI101-03C-EBT-13, 20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-2     | DR2-2, DR2-2-LB-15, 20120420          | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | DR2-2     | DR2-2, DR2-2-EBT-16, 20140513         | 5/13/2014   | 5/13/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-5     | DR2-5, DR2-5-EBT-12, 20130508         | 5/8/2013    | 5/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-4     | DR1-4, DR1-4-LB-20, 20141018          | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-8     | DR1-8, DR1-8-LB-20, 20141018          | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-4     | DR1-4, DR1-4-LB-16, 20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 10                   | 0           | DR1-6A    | DR1-6A, DR1-6A-EBT-18, 20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 10                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 1                    | 0           | DR1-5     | DR1-5, DR1-5-EBT-14, 20131109         | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 1                    | 0           | DR1-4     | DR1-4, DR1-4-LB-22, 20151007          | 5/17/2014   | 5/17/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 1                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-03C | WI101-03C, WI101-03C-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | DR1-5     | DR1-5, DR1-5-EBT-16, 20140508         | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | WI101-03C | WI101-03C, WI101-03C-EBT-12, 20130509 | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-4     | DR1-4, DR1-4-LA-22, 20151007          | 4/17/2015   | 4/17/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | DR2-5     | DR2-5, DR2-5-EBT-14, 20131105         | 11/5/2013   | 11/5/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-5     | DR1-5, DR1-5-EBT-13, 20130820         | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | WI101-02A | WI101-02A, WI101-02A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-6A    | DR1-6A, DR1-6A-LB-12, 20130816        | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-03B | WI101-03B, WI101-03B-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 10                   | 0           | WI101-03C | WI101-03C, WI101-03C-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 10                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-03B | WI101-03B, WI101-03B-EBT-15, 20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 1.4                  | 0           | DR1-8     | DR1-8, DR1-8-LB-16, 20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-4     | DR1-4, DR1-4-LB-24, 20161016          | 10/16/2016  | 10/16/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | WI101-03B | WI101-03B, WI101-03B-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-5A    | DR1-5A, DR1-5A-LB-25, 20170420        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-6     | DR2-6, DR2-6-LB-20, 20141020          | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 42                   | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 42                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-6     | DR1-6, DR1-6-EBT-14, 20131109         | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-6A    | DR1-6A, DR1-6A-EBT-12, 20130512       | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | DR1-6     | DR1-6, DR1-6-EBT-13, 20130816         | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 50                   | 0           | DR2-5     | DR2-5, DR2-5-LB-23, 20160421          | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 50                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-1     | DR2-1, DR2-1-LB-15, 20120423          | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-14, 20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-4     | DR1-4, DR1-4-EBT-12, 20130816         | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-1     | DR2-1, DR2-1-LB-24, 20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 5                    | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4 | 25                   | 0           | DR2-5     | DR2-5, DR2-5-LB-25, 20170422          | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 25                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-1     | DR2-1, DR2-1-LB-17, 20120410          | 4/10/2012   | 4/10/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-5     | DR2-5, DR2-5-LB-15, 20120420          | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | DR1-5A    | DR1-5A, DR1-5A-LB-23, 20160424        | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 25                   | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 25                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 2.5                  | 0           | DR1-6A    | DR1-6A, DR1-6A-EBT-12, 20130816       | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-1     | DR2-1, DR2-1-LA-18, 20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 10                   | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | UJ        | 10                     |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-6     | DR1-6, DR1-6-EBT-11, 20130206         | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-5A    | DR1-5A, DR1-5A-LB-25, 20170420        | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 12.5                 | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 12.5                   |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | WI101-02B | WI101-02B, WI101-02B-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-6     | DR1-6, DR1-6-LB-15, 20120422          | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | WI101-02B | WI101-02B, WI101-02B-EBT-14, 20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR2-4     | DR2-4, DR2-4-LA-22, 20151007          | 4/17/2015   | 4/17/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4 | 0.5                  | 0           | DR1-6     | DR1-6, DR1-6-LB-23, 20160424          | 4/24/2016   | 4/24/20       |                      |        |            |                    |         |           |                        |



TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                           | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                          | Sample Date | Analysis Date | Analytical Method  | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|----------------------------------------|----------------------|-------------|----------|------------------------------------|-------------|---------------|--------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW21-05 | PMW21-05_PMW21-05-L5-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-11, 20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-14, 20131106 | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-L5-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-12, 20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-16, 20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | UJ        | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-L5-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW21-05 | PMW21-05_PMW21-05-L5-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 10                   | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 10                     |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-L5-24, 20161015  | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-18, 20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-18, 20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 10                   | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-15, 20140211 | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-14, 20141006 | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-LB-16, 20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-L5-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 5                    | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-15, 20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-L5-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 2.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-14, 20131105 | 11/5/2013   | 11/5/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 12.5                 | 0           | PMW92-03 | PMW92-03_PMW92-03-L5, 20140202     | 2/2/2014    | 2/2/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 12.5                   |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LB-20, 20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-18, 20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.513                | 1           | PMW92-02 | PMW92-02_PMW92-02-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | J         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-15, 20140512 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 5                    | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4     | 1                    | 0           | PMW92-02 | PMW92-02_PMW92-02-L5-17, 20140314  | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 1                      |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-L5-19, 20140424  | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.511                | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-18, 20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-L5-21, 20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-LB-24, 20161015  | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.762                | 1           | PMW92-02 | PMW92-02_PMW92-02-L5-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | J         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.52                 | 0           | PMW92-02 | PMW92-02_PMW92-02-L5-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-L5-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-16, 20140512 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-06 | PMW92-06-L5-15, 20120421           | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-L5-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 2.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 2.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-11, 20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 0.5                    |
| Fluval 1,1-Dichloroethene, 75-35-4     | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-L5-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 5                      |
| Fluval 1,1-Dichloroethene, 75-35-4     | 10                   | 0           | PMW92-03 | PMW92-03_PMW92-03-L5, 20140202     | 2/2/2014    | 2/2/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,1-Dichloroethene     | 75-35-4 | U         | 10                     |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W102-01  | W102-01_W102-01-LB-14, 20131106    | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 12.5                 | 0           | W102-07  | W102-07_W102-07-EBT-15, 20140205   | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 12.5                   |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 12.5                 | 0           | W102-05  | W102-05_W102-05-EBT-16, 20140512   | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 12.5                   |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | W102-02  | W102-02_W102-02-EBT-16, 20140512   | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 10                     |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-17, 20140807 | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | W105-05  | W105-05_W105-05-EBT-14, 20131106   | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-12, 20130513 | 5/12/2013   | 5/12/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-101B  | MW-101B_MW-101B-L5-23, 20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W101-05A | W101-05A_W101-05A-EBT-18, 20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W101-05C | W101-05C_W101-05C-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-12, 20130509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W102-07  | W102-07_W102-07-EBT-14, 20131107   | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W105-05  | W105-05_W105-05-EBT-16, 20140511   | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W102-03  | W102-03_W102-03-EBT-17, 20140812   | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | W101-05C | W101-05C_W101-05C-EBT-13, 20130817 | 8/17/2013   | 8/1           |                    |        |            |                        |         |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                          | ProCUL Result (ug/L) | ProCUL Flag | Location   | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|------------|--------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-101T    | MW-101T_MW-101T-LA-18_20131012 | 10/12/2013  | 8/26/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101T    | MW-101T_MW-101T-LA-18_20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101T    | MW-101T_MW-101T-LA-18_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-101T    | MW-101T_MW-101T-LA-18_20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101T    | MW-101T_MW-101T-LA-18_20140807 | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-101T    | MW-101T_MW-101T-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-101T    | MW-101T_MW-101T-LB-24_20161014 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 10.6                 | 1           | MW-92-08   | MW-92-08_EBT-12_20130509       | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 12.5                 | 0           | MW-21-04A  | MW-21-04A_EBT-16_20140507      | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 12.5                   |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-21-01A  | MW-21-01A_EBT-16_20140507      | 5/7/2013    | 5/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-01A  | MW-21-01A_EBT-16_20140507      | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-104     | MW-104_EBT-12_20150104         | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-21-01B  | MW-21-01B_EBT-11_20130205      | 2/5/2013    | 2/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 10                   | 0           | MW-92-08   | MW-92-08_EBT-14_20131106       | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-101-05A | MW-101-05A_EBT-14_20131110     | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-92-07   | MW-92-07_EBT-17_20140812       | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-92-08   | MW-92-08_EBT-15_20140210       | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-03B  | MW-21-03B_EBT-17_20140806      | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-01A  | MW-21-01A_EBT-16_20140507      | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101-05A | MW-101-05A_EBT-11_20130208     | 8/28/2013   | 8/28/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101-07C | MW-101-07C_EBT-18_20141108     | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-03B  | MW-21-03B_EBT-18_20141106      | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-01A  | MW-21-01A_EBT-15_20140206      | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101-07C | MW-101-07C_EBT-14_20131109     | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-85-06   | MW-85-06_EBT-16_20140512       | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 10                   | 0           | MW-101-07C | MW-101-07C_EBT-16_20140509     | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-21-04A  | MW-21-04A_EBT-14_20131108      | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-08   | MW-20-08_EBT-15_20140208       | 4/8/2013    | 4/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-04B  | MW-21-04B_EBT-15_20140207      | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-04A  | MW-21-04A_EBT-15_20130206      | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-101T    | MW-101T_MW-101T-LB-20_20140109 | 1/9/2014    | 1/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-101-05A | MW-101-05A_EBT-11_20130208     | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-01A  | MW-21-01A_EBT-18_20141111      | 11/11/2014  | 11/11/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 10                   | 0           | MW-21-04A  | MW-21-04A_EBT-18_20141106      | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-101T    | MW-101T_MW-101T-LB-22_20150107 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 2.5                  | 0           | MW-92-02   | MW-92-02_EBT-18_20141110       | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 5                    | 0           | MW-21-04A  | MW-21-04A_EBT-12_20130211      | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-08   | MW-20-08_EBT-15_20140203       | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-00   | MW-20-00_EBT-15_20140203       | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-00   | MW-20-00_EBT-15_20140203       | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-00   | MW-20-00_EBT-15_20140203       | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-00   | MW-20-00_EBT-15_20140203       | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4 | 0.5                  | 0           | MW-20-04B  | MW-20-04B_EBT-15_20140425      | 4/9/2015    | 4/9/2015      | 8260B5030           |        |            |                        |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                              | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (µg/L) |
|-------------------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|----------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-213   | MW-213_EBT-16_20140511         | 5/11/2014   | 5/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-210B  | MW-210B_MW-210B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-210B  | MW-210B_MW-210B-LB-25_20170419 | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-216   | MW-216_MW-216A-LA-18_20130111  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | MW-213   | MW-213_MW-213-LB-24_20161017   | 10/17/2016  | 10/17/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LS-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LA-18_20130112   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LB-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LS-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LA-18_20130112 | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | MW-213   | MW-213_MW-213-LS-23_20160424   | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-11_20130202  | 2/11/2013   | 2/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-16_20161021   | 10/21/2016  | 10/21/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-210B  | MW-210B_MW-210B-LB-20_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-210B  | MW-210B_MW-210B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-215B  | MW-215B_MW-215B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-24_20161011   | 10/11/2016  | 10/11/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | MW-213   | MW-213_MW-213-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-210B  | MW-210B_MW-210B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LB-20_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-215B  | MW-215B_MW-215B-LB-20_20141021 | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-210B  | MW-210B_MW-210B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-20_20121020   | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-213   | MW-213_MW-213-LB-16_20121022   | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-207B  | MW-207B_MW-207B-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LA-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LA-18_20130112   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-213   | MW-213_MW-213-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-209B  | MW-209B_MW-209B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LB-20_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-217   | MW-217_MW-217-LS-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-21    | MW-21_MW-21-LS-25_20170420     | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LS-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-24_20161011   | 10/11/2016  | 10/11/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-216   | MW-216_MW-216-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | MW-213   | MW-213_MW-213-LS-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | MW-213   | MW-213_MW-213-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-209B  | MW-209B_MW-209B-LB-20_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-15_20140211  | 2/11/2014   | 2/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-209B  | MW-209B_MW-209B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-21    | MW-21_MW-21-LS-23RE_20160523   | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-208B  | MW-208B_MW-208B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-209B  | MW-209B_MW-209B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-217   | MW-217_MW-217-LS-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-21    | MW-21_MW-21-LS-25_20170420     | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                              | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                               | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|-------------------------------------------|----------------------|-------------|------------|-----------------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-26-LB-16_20121021              | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-L5-17_20130410              | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.976                | 0           | MW-85      | MW-85_MW-85-EBT-16_20130511             | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-L5-25_20170420              | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-260     | MW-260_MW-LA-18_20131011                | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-L5-15_20120423              | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-LA-22_20151007                 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-LB-24_20161015                 | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5.83                 | 1           | MW-85      | MW-85_MW-85-EBT-12_20130510             | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-L5-21_20150409              | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-15_20120423                 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-259     | MW-259_MW-L5-21_20150410                | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-258     | MW-258_MW-LB-16_20121021                | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-25_20170419                 | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-85      | MW-85_MW-L5-15_20120423                 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-63B     | MW-63B_MW-L5-22_20151007                | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-17_20130410                 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-19_20140424                 | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-L5-19_20140425              | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-16_20121021                 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-260     | MW-260_MW-LA-22_20151007                | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-258     | MW-258_MW-LA-22_20151007                | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-16_20121021                 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-258     | MW-258_MW-LB-24_20161015                | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-LA-22_20151008              | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.96                 | 1           | MW-85      | MW-85_MW-85-EBT-17_20140810             | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-26      | MW-26_MW-L5-20_20121021                 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-39      | MW-39_MW-39-LA-18_20131011              | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 10.4                 | 1           | MW-85      | MW-85_MW-85-EBT-11_20130208             | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.69                 | 1           | MW-85      | MW-85_MW-85-EBT-18_20141110             | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | J         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 4.22                 | 1           | MW-85      | MW-85_MW-85-EBT-15_20140205             | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | J         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM21-01   | PWM21-01_PWM21-01-EBT-11_20130205       | 2/5/2013    | 2/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-12_20130513   | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-04B | PWM101-04B_PWM101-04B-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-98      | MW-98_MW-L5-15_20120423                 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-97      | MW-97_MW-LA-22_20151007                 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-98      | MW-98_MW-L5-23_20160422                 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM21-01   | PWM21-01_PWM21-01-EBT-12_20130511       | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-13_20130816   | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM21-02   | PWM21-02_PWM21-02-EBT-13_20130816       | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-96      | MW-96_MW-LB-20_20141020                 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | PWM101-02A | PWM101-02A_PWM101-02A-L5-25-RE_20170424 | 4/24/2017   | 4/24/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | PWM21-01   | PWM21-01_PWM21-01-EBT-13_20130817       | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-11_20130206   | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM21-02   | PWM21-02_PWM21-02-EBT-15_20140206       | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-04B | PWM101-04B_PWM101-04B-EBT-11_20130207   | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-98      | MW-98_MW-LA-22_20151007                 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-16_20140509   | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-04B | PWM101-04B_PWM101-04B-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-07B | PWM101-07B_PWM101-07B-L5-23_20160424    | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-16_20140509   | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | PWM101-06A | PWM101-06A_PWM101-06A-L5-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-16_20121021            | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-98      | MW-98_MW-98-L5-17_20130410              | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-98      | MW-98_MW-98-L5-19_20140424              | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-06A | PWM101-06A_PWM101-06A-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-07B | PWM101-07B_PWM101-07B-L5-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-02B | PWM101-02B_PWM101-02B-EBT-14_20131109   | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PWM101-06A | PWM101-06A_PWM101-06A-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MW-98      | MW-98_MW-LB-16_20121021                 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | PWM21-01   | PWM21-01_PWM21-01-EBT-14_20131107       | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1                      |
| Fluoride, 1,2,3                           |                      |             |            |                                         |             |               |                     |        |            |                        |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                              | ProUCL Result (ug/L) | ProUCL Flag | Location  | Sample ID                             | Sample Date | Analysis Date | Analytical Method  | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|-------------------------------------------|----------------------|-------------|-----------|---------------------------------------|-------------|---------------|--------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-04  | PMW21-04-LB-24, 20161013              | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-02  | PMW21-02-EBT-17, 20140805             | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-03  | PMW21-03-L5-23, 20160423              | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-05  | PMW21-05-LA-18, 20131012              | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-04  | PMW21-04-EBT-11, 20130207             | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-03  | PMW21-03-LB-24, 20161013              | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-03  | PMW21-03-L5-15, 20120423              | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-03  | PMW21-03-LA-22, 20151007              | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MMW-92    | MMW-92-LB-20, 20141020                | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-04  | PMW21-04-EBT-17, 20140805             | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-04  | PMW21-04-EBT-17, 20140805             | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-05  | PMW21-05-LB-20, 20141018              | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-04  | PMW21-04-EBT-14, 20131108             | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-02  | PMW21-02-L5-23RE, 20160523            | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MMW-92    | MMW-92-L5-23, 20160420                | 4/20/2016   | 4/20/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | MMW-92    | MMW-92-LB-20, 20131012                | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | PMW21-03  | PMW21-03-L5-15, 20130411              | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-5A    | DR1-5A-L5-15, 20120422                | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-2     | DR2-2-L5-23, 20160422                 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 50                   | 0           | DR1-6     | DR1-6-L5-25, 20161013                 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 50                     |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-1     | DR2-1-L5-19, 20140424                 | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 12.5                 | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 12.5                   |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-5A    | DR1-5A-LB-16, 20121020                | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-3     | DR1-3-LA-22, 20151007                 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | DR1-5     | DR1-5-L5-23, 20160424                 | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | WI101-04B | WI101-04B, WI101-04B-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-2     | DR2-2-L5-23, 20130510                 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-3     | DR2-3-L5-25, 20161013                 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-7     | DR1-7-LA-18, 20131012                 | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-3     | DR2-3-LB-24, 20161017                 | 10/17/2016  | 10/17/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | WI101-04B | WI101-04B, WI101-04B-EBT-13, 20130818 | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 25                   | 0           | WI101-02C | WI101-02C, WI101-02C-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 25                     |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | WI101-03A | WI101-03A, WI101-03A-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | DR1-6     | DR1-6-EBT-13, 20130816                | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | WI101-03B | WI101-03B, WI101-03B-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 25                   | 0           | WI101-04A | WI101-04A, WI101-04A-EBT-18, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 25                     |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-2     | DR2-2-L5-25, 20161013                 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-2     | DR1-2-LB-24, 20161014                 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | WI101-04A | WI101-04A, WI101-04A-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | UJ        | 5                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-1A    | DR1-1A-LB-16, 20121019                | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 12.5                 | 0           | DR1-6A    | DR1-6A-L5-25, 20161013                | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 12.5                   |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | DR1-6A    | DR1-6A-L5-23, 20160424                | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-6A    | DR1-6A-EBT-11, 20130206               | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | DR1-6A    | DR1-6A-EBT-13, 20130816               | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-1     | DR1-1-LB-24, 20161013                 | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 4.4                  | 1           | DR2-6     | DR2-6-L5-23, 20160422                 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-1A    | DR1-1A-LB-20, 20141018                | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | WI101-04A | WI101-04A, WI101-04A-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | WI101-02A | WI101-02A, WI101-02A-EBT-18, 20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-5     | DR1-5-L5-15, 20120422                 | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-6     | DR1-6-EBT-14, 20131109                | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-1     | DR2-1-L5-17, 20130410                 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-5     | DR2-5-L5-25, 20161013                 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-5A    | DR1-5A-LB-24, 20161013                | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 13.3                 | 1           | DR2-6     | DR2-6-LB-20, 20141020                 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | WI101-02B | WI101-02B, WI101-02B-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-4     | DR2-4-LA-18, 20131012                 | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-4     | DR2-4-LA-22, 20151007                 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-1A    | DR1-1A-LA-18, 20131012                | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-3     | DR1-3-LA-18, 20131012                 | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-5     | DR1-5-L5-25, 20161013                 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-6A    | DR1-6A-L5-25, 20161013                | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluoride, 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | WI101-03A | WI101-03A, WI101-03A-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                          | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                           | Sample Date | Analysis Date | Analytical Method  | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|----------|-------------------------------------|-------------|---------------|--------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | DR1-6A   | DR1-6A, DR1-6A-EBT-17, 20140807     | 8/7/2014    | 8/7/2014      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-10B  | DR1-10B, DR1-10B-EBT-15, 20140209   | 2/9/2014    | 2/9/2014      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-1    | DR1-1, DR1-1A-22, 20151007          | 7/7/2015    | 10/7/2015     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-1    | DR1-1, DR1-1B-16, 20121019          | 10/19/2012  | 10/19/2012    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | DR1-10A  | DR1-10A, DR1-10A-EBT-12, 20130513   | 5/13/2013   | 5/13/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-8    | DR1-8, DR1-8-LB-20, 20141018        | 10/18/2014  | 10/18/2014    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-10B  | DR1-10B, DR1-10B-EBT-12, 20130512   | 5/12/2013   | 5/12/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-10B  | DR1-10B, DR1-10B-EBT-12, 20130512   | 5/12/2013   | 5/12/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-6    | DR1-6, DR1-6-EBT-16, 20140508       | 5/8/2014    | 5/8/2014      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-4    | DR2-4, DR2-4-LB-16, 20121021        | 10/21/2012  | 10/21/2012    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-10C  | DR1-10C, DR1-10C-EBT-15, 20140509   | 5/9/2014    | 5/9/2014      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1.25                   |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-3    | DR1-3, DR1-3-LB-20, 20141019        | 10/19/2014  | 10/19/2014    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | DR2-2    | DR2-2, DR2-2-EBT-14, 20131106       | 11/6/2013   | 11/6/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | DR1-10B  | DR1-10B, DR1-10B-EBT-12, 20141107   | 11/7/2014   | 11/7/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR1-3    | DR1-3, DR1-3-LB-25, 20170421        | 4/21/2017   | 4/21/2017     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | DR2-4    | DR2-4, DR2-4-LB-24, 20161121        | 10/13/2016  | 10/13/2016    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | DR1-10B  | DR1-10B, DR1-10B-EBT-14, 20131110   | 11/10/2013  | 11/10/2013    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 51.2                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-14, 20131106 | 11/6/2013   | 11/6/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 2.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-19, 20130209  | 2/9/2013    | 2/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 39.9                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-05 | PMW21-05, PMW21-05-LB-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-12, 20130509 | 5/9/2013    | 5/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | PMW85-01 | PMW85-01, PMW85-01-EBT-15, 20140210 | 2/10/2014   | 2/10/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 55.7                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-15, 20140210 | 2/10/2014   | 2/10/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 62.7                 | 1           | PMW85-05 | PMW85-05, PMW85-05-LB-16, 20121022  | 10/22/2012  | 10/22/2012    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 55.7                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-11, 20161015 | 2/9/2016    | 2/9/2016      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1.25                   |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 54.2                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-14, 20131106 | 11/6/2013   | 11/6/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 41.6                 | 0           | PMW85-05 | PMW85-05, PMW85-05-LB-19, 20130209  | 2/9/2013    | 2/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-LB-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.905                | 1           | PMW85-01 | PMW85-01, PMW85-01-EBT-16, 20140511 | 5/11/2014   | 5/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | J         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-15, 20140211 | 2/11/2014   | 2/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-05 | PMW21-05, PMW21-05-LB-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW21-05 | PMW21-05, PMW21-05-LB-19, 20130408  | 4/8/2014    | 4/8/2014      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 33.9                 | 1           | PMW85-05 | PMW85-05, PMW85-05-LB-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-17, 20130411  | 4/11/2013   | 4/11/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 1                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 1                    | 0           | PMW85-01 | PMW85-01, PMW85-01-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-24, 20161015  | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW85-01 | PMW85-01, PMW85-01-EBT-12, 20130510 | 5/10/2013   | 5/10/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-16, 20140511 | 5/11/2014   | 5/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-19, 20130209  | 2/9/2013    | 2/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW85-01 | PMW85-01, PMW85-01-EBT-14, 20130813 | 8/13/2013   | 8/13/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 46.5                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-12, 20130508 | 5/8/2013    | 5/8/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | J         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 15.9                 | 1           | PMW85-05 | PMW85-05, PMW85-05-LB-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | J         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-19, 20130209  | 2/9/2013    | 2/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW85-01 | PMW85-01, PMW85-01-EBT-14, 20131105 | 11/5/2013   | 11/5/2013     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 2.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 83.3                 | 1           | PMW92-06 | PMW92-06, PMW92-06-LB-15, 20120421  | 4/21/2012   | 4/21/2012     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 26.1                 | 1           | PMW85-05 | PMW85-05, PMW85-05-LB-24, 20161015  | 10/15/2016  | 10/15/2016    | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5                    | 0           | PMW92-03 | PMW92-03, PMW92-03-LB-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 5                      |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 43.7                 | 1           | PMW85-05 | PMW85-05, PMW85-05-EBT-16, 20140512 | 5/12/2014   | 5/12/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-LB-15, 20120421  | 4/21/2012   | 4/21/2012     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-19, 20130209  | 2/9/2013    | 2/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 11.1                 | 1           | PMW85-01 | PMW85-01, PMW85-01-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 10                   | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 10                     |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 10.1                 | 1           | PMW85-01 | PMW85-01, PMW85-01-LB-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 5.35                 | 1           | PMW85-01 | PMW85-01, PMW85-01-EBT-11, 20130209 | 2/9/2013    | 2/9/2013      | 8260850308/5030C50 | T      | VOC        | 1,2,3-Trichloropropane | 96-18-4 | U         | 0.5                    |
| Fluor 1,2,3-Trichloropropane, 96-18-4 | 0.5                  | 0           | PMW85-01 | PMW85-01, PMW85-01-LB-24, 20161015  | 10/15/2016  |               |                    |        |            |                        |         |           |                        |

TABLE B.4  
PROJCL.5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Notes:  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                           | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|----------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 6.76                 | 1           | W101-07C | W101-07C_W101-07C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 6.25                 | 0           | W101-07B | W101-07B_W101-07B-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 6.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 34.2                 | 1           | W101-07C | W101-07C_W101-07C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | W101-07B | W101-07B_W101-07B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 6.32                 | 1           | W101-07B | W101-07B_W101-07B-EBT-15_20140205 | 2/5/2014    | 2/5/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 6.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 14.9                 | 1           | W101-07B | W101-07B_W101-07B-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 12.5                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.488                | 1           | W101-07B | W101-07B_W101-07B-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 5.66                 | 1           | W101-07B | W101-07B_W101-07B-EBT-17_20130816 | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 25.7                 | 1           | W101-07B | W101-07B_W101-07B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 5.36                 | 1           | W101-07B | W101-07B_W101-07B-EBT-16_20140212 | 2/12/2014   | 2/12/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 6.25                 | 0           | W101-04B | W101-04B_W101-04B-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 6.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101T  | MW-101T_MW-101T-LS-21_20120423    | 4/23/2012   | 4/23/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101T  | MW-101T_MW-101T-LS-21_20150408    | 4/8/2015    | 4/8/2015      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-104   | MW-104_MW-104-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-103   | MW-103_MW-103-LB-20_20140119      | 1/19/2014   | 1/19/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 1                    | 0           | MW-101T  | MW-101T_MW-101T-LS-17_20130411    | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1                      |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LS-19_20140426    | 4/26/2014   | 4/26/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 25.7                 | 1           | W101-07B | W101-07B_W101-07B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 5.36                 | 1           | W101-07B | W101-07B_W101-07B-EBT-16_20140212 | 2/12/2014   | 2/12/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-07B | W101-07B_W101-07B-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 6.25                 | 0           | MW-103   | MW-103_MW-103-LB-20_20140119      | 1/19/2014   | 1/19/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101T  | MW-101T_MW-101T-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101T  | MW-101T_MW-101T-LS-21_20150408    | 4/8/2015    | 4/8/2015      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-104   | MW-104_MW-104-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-103   | MW-103_MW-103-LB-20_20140119      | 1/19/2014   | 1/19/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 1                    | 0           | MW-101T  | MW-101T_MW-101T-LS-17_20130411    | 4/11/2013   | 4/11/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1                      |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LS-19_20140426    | 4/26/2014   | 4/26/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 25.7                 | 1           | W101-07B | W101-07B_W101-07B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.25                   |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 5.36                 | 1           | W101-07B | W101-07B_W101-07B-EBT-16_20140212 | 2/12/2014   | 2/12/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LB-20_20141109    | 11/9/2014   | 11/9/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U</       |                        |



TABLE B.4  
PROJUL.S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                            | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|-------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LB-16, 20120120     | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LB-16, 20140426   | 4/26/2014   | 4/26/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-16, 20130820 | 8/20/2013   | 8/20/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-17, 20140810  | 8/10/2014   | 8/10/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-12, 20130511  | 5/11/2013   | 5/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LA-18, 20130102   | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-16, 20140424   | 4/24/2014   | 4/24/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-25, 20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LB-24, 20160103     | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-20, 20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-18, 20130820  | 8/20/2013   | 8/20/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1                    | 0           | MW-219   | MW-219_MW-219-LB-17, 20130411   | 4/11/2013   | 4/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-19, 20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-24, 20160104 | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-213   | MW-213_MW-213-EBT-18, 20120109  | 1/9/2012    | 1/9/2012      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-213   | MW-213_MW-213-LB-22, 20160424   | 4/24/2016   | 4/24/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1                    | 0           | MW-2078  | MW-2078_MW-2078-LB-17, 20130411 | 4/11/2013   | 4/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1                      |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-16, 20120120 | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-12, 20130511  | 5/11/2013   | 5/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-22, 20150108 | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-15, 20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-213   | MW-213_MW-213-LB-16, 20120122   | 10/22/2012  | 10/22/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-24, 20160104 | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-11, 20130421  | 4/21/2013   | 4/21/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-20, 20141020 | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-20, 20141021 | 10/21/2014  | 10/21/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-24, 20160104   | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-22, 20150108 | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-19, 20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-16, 20120121 | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LA-22, 20151007   | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-15, 20120109  | 1/11/2013   | 1/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-17, 20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-25, 20170421   | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-19, 20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-16, 20120120   | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-22, 20150108 | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-20, 20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.83                 | 1           | MW-213   | MW-213_MW-213-EBT-14, 20131111  | 11/11/2013  | 11/11/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.83                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-24, 20160104 | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-24, 20160104   | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-22, 20150108 | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-24, 20160104 | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-15, 20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-16, 20120120 | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-25, 20170421 | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-213   | MW-213_MW-213-EBT-16, 20140511  | 5/11/2014   | 5/11/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | MW-21    | MW-21_MW-21-EBT-17, 20140805    | 8/5/2014    | 8/5/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-16, 20120120   | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-22, 20150108 | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LA-22, 20150108 | 10/8/2015   | 10/8/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LA-22, 20150107 | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-19, 20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-20, 20141020 | 10/21/2014  | 10/21/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LA-18, 20130111 | 10/11/2013  | 10/11/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-21, 20150410 | 4/10/2015   | 4/10/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-25, 20170420 | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | MW-213   | MW-213_MW-213-EBT-17, 20140810  | 8/10/2014   | 8/10/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-24, 20160104   | 10/20/2016  | 10/20/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-23, 20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-23, 20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-25, 201704   |             |               |                   |        |            |                        |         |           |                        |



TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                            | ProUCL Result (ug/L) | ProUCL Flag | Location    | Sample ID                                | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------------|----------------------|-------------|-------------|------------------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-50       | MW-50_MW-50-LB-16, 20121019              | 10/19/2012  | 10/19/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-39       | MW-39_MW-39-L5-23, 20160422              | 4/22/2016   | 4/22/2016     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-259      | MW-259_MW-259-L5-21, 20150410            | 4/10/2015   | 4/10/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-LB-24, 20161015              | 10/15/2016  | 10/15/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-11, 20130208             | 2/8/2013    | 2/8/2013      | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW-88-L5-23, 20160421              | 4/21/2016   | 4/21/2016     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-LA-22, 2015100410          | 10/7/2015   | 10/7/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-L5-21, 20150410            | 4/10/2015   | 4/10/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW-88-LB-16, 20121021              | 10/21/2012  | 10/21/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-L5-19, 20140425            | 4/25/2014   | 4/25/2014     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-638      | MW-638_MW-638-LB-16, 20121021            | 10/21/2012  | 10/21/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-17, 20140810             | 8/10/2014   | 8/10/2014     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW64-LA-22, 20151007               | 10/7/2015   | 10/7/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW64-LB-20, 20141020               | 10/20/2014  | 10/20/2014    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW-88-L5-17, 20131013              | 4/10/2013   | 4/10/2013     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-LA-18, 20131012            | 10/12/2013  | 10/12/2013    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-18, 20141110             | 11/10/2014  | 11/10/2014    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-LB-24, 20161015            | 10/15/2016  | 10/15/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW64-L5-21, 20150410               | 4/10/2015   | 4/10/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-L5-15, 20120421              | 4/21/2012   | 4/21/2012     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW-88-LA-18, 20131012              | 10/12/2013  | 10/12/2013    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1                    | 0           | MW-258      | MW-258_MW-258-L5-17, 20130411            | 4/11/2013   | 4/11/2013     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1                      |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW-88-LB-24, 20161015              | 10/15/2016  | 10/15/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-257      | MW-257_MW-257-L5-19, 20120423            | 4/23/2012   | 4/23/2012     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW88-L5-21, 20150410               | 4/10/2015   | 4/10/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW88-LA-22, 20151006               | 10/6/2015   | 10/6/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-638      | MW-638_MW-638-LB-24, 20161014            | 10/14/2016  | 10/14/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW-64-L5-19, 20140421              | 4/21/2014   | 4/21/2014     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-LB-16, 20121019              | 10/19/2012  | 10/19/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW-64-L5-19, 20140425              | 4/25/2014   | 4/25/2014     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW-64-L5-23, 20170419              | 4/19/2017   | 4/19/2017     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-LA-18, 20131012            | 4/23/2012   | 4/23/2012     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-13, 20130814             | 8/14/2013   | 8/14/2013     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-LB-20, 20141021            | 10/21/2014  | 10/21/2014    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-L5-15, 20120423            | 4/23/2012   | 4/23/2012     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-257      | MW-257_MW-257-LA-18, 20131012            | 10/12/2013  | 10/12/2013    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW-64-LB-24, 20161015              | 10/15/2016  | 10/15/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-257      | MW-257_MW-257-LB-16, 20121019            | 10/19/2012  | 10/19/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-12, 20130510             | 5/10/2013   | 5/10/2013     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW-64-L5-17, 20130410              | 4/10/2013   | 4/10/2013     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-16, 20140511             | 5/11/2014   | 5/11/2014     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-L5-15, 20120421              | 4/21/2012   | 4/21/2012     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1                    | 0           | MW-257      | MW-257_MW-257-L5-17, 20130411            | 4/11/2013   | 4/11/2013     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1                      |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-258      | MW-258_MW-258-LB-16, 20121021            | 10/21/2012  | 10/21/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-64       | MW-64_MW-64-LB-16, 20121021              | 10/21/2012  | 10/21/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-LB-16, 20121019              | 10/19/2012  | 10/19/2012    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-L5-25, 20170419              | 4/19/2017   | 4/19/2017     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-638      | MW-638_MW638-LB-24, 20161021             | 10/21/2016  | 10/21/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-LB-20, 20141019              | 10/19/2014  | 10/19/2014    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-15, 20140205             | 2/5/2014    | 2/5/2014      | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-88       | MW-88_MW88-LB-20, 20141020               | 10/20/2014  | 10/20/2014    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW21-02   | PWMW21-02_PWMW21-02-L5-25, 20170420      | 4/20/2017   | 4/20/2017     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW101-06B | PWMW101-06B_PWMW101-06B-LA-18, 20141018  | 10/18/2014  | 10/18/2014    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW101-02B | PWMW101-02B_PWMW101-02B-L5-25, 20170421  | 4/21/2017   | 4/21/2017     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-92       | MW-92_MW92-LA-22, 20151006               | 10/6/2015   | 10/6/2015     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW101-03A | PWMW101-03A_PWMW101-03A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | PWMW101-02B | PWMW101-02B_PWMW101-02B-L5-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW101-06B | PWMW101-06B_PWMW101-06B-L5-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW101-06B | PWMW101-06B_PWMW101-06B-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-94A      | MW-94A_MW-94A-L5-25, 20170420            | 4/20/2017   | 4/20/2017     | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.32                 | 1           | PWMW101-02A | PWMW101-02A_PWMW101-02A-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260850308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 0.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PWMW21-01   | PWMW21-01_PWMW21-0                       |             |               |                     |        |            |                        |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                            | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                               | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------------|----------------------|-------------|------------|-----------------------------------------|-------------|---------------|----------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-LS-15, 20120422  | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW-98     | MW-98, MW-98-LS-17, 20130410            | 4/10/2013   | 4/10/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-11, 20130207     | 2/12/2013   | 2/12/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-92      | MW-92, MW92-LS-21, 20150410             | 4/10/2015   | 4/10/2015     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LS-15, 20120422  | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.34                 | 1           | PMW21-04   | PMW21-04, PMW21-04-EBT-14, 20131108     | 11/8/2013   | 11/8/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-11, 20130207 | 2/12/2013   | 2/12/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LS-18, 20131012          | 10/12/2013  | 10/12/2013    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-97      | MW-97, MW97-LS-21, 20150409             | 4/9/2015    | 4/9/2015      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LB-18, 20121019  | 10/19/2012  | 10/19/2012    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-15, 20140207 | 2/17/2014   | 2/17/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LS-25, 20170421  | 4/21/2017   | 4/21/2017     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-98      | MW-98, MW-98-LS-19, 20140425            | 4/25/2014   | 4/25/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW21-03   | PMW21-03, PMW21-03-LS-25, 20170420      | 4/20/2017   | 4/20/2017     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.954                | 1           | PMW21-04   | PMW21-04, PMW21-04-EBT-15, 20140208     | 2/8/2014    | 2/8/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-18, 20141105     | 11/5/2014   | 11/5/2014     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LB-24, 20161014            | 10/14/2016  | 10/14/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-22, 20151007  | 10/7/2015   | 10/7/2015     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-96      | MW-96, MW96-LB-20, 20141020             | 10/20/2014  | 10/20/2014    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-18, 20141105     | 10/13/2016  | 10/13/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LS-25, 20170421  | 4/21/2017   | 4/21/2017     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-15, 20120423            | 4/23/2012   | 4/23/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-11, 20130207     | 2/12/2013   | 2/12/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-LB-24, 20161013      | 10/13/2016  | 10/13/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-23, 20160421            | 4/21/2016   | 4/21/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | WI101-02B  | WI101-02B, WI101-02B-EBT-13, 20131109   | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-6      | DR1-6, DR1-6-LS-23, 20121019            | 10/24/2016  | 10/24/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-6      | DR2-6, DR2-6-LS-23, 20160422            | 4/22/2016   | 4/22/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-1      | DR2-1, DR2-1-LB-24, 20161015            | 10/15/2016  | 10/15/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 6.7                  | 1           | DR1-6A     | DR1-6A, DR1-6A-EBT-13, 20130816         | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-1      | DR2-1, DR2-1-LA-18, 20131012            | 10/12/2013  | 10/12/2013    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-3      | DR2-3, DR2-3-LB-16, 20121021            | 10/21/2012  | 10/21/2012    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 2.58                 | 1           | WI101-02C  | WI101-02C, WI101-02C-EBT-14, 20131109   | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 2.5                    |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | WI101-04C  | WI101-04C, WI101-04C-EBT-12, 20130509   | 5/9/2013    | 5/9/2013      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-7      | DR1-7, DR1-7-LB-24, 20161014            | 10/14/2016  | 10/14/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 3.35                 | 1           | WI101-04B  | WI101-04B, WI101-04B-EBT-14, 20131111   | 11/11/2013  | 11/11/2013    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-3      | DR2-3, DR2-3-LS-17, 20130410            | 4/10/2013   | 4/10/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-6      | DR1-6, DR1-6-LB-24, 20161014            | 10/14/2016  | 10/14/2016    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-5A     | DR1-5A, DR1-5A-LS-15, 20120422          | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 1.25                 | 0           | DR1-5A     | DR1-5A, DR1-5A-LS-23, 20160424          | 4/24/2016   | 4/24/2016     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 12.5                 | 0           | WI101-02C  | WI101-02C, WI101-02C-EBT-16, 20140509   | 5/9/2014    | 5/9/2014      | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 12.5                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-1      | DR2-1, DR2-1-LA-22, 20151006            | 10/6/2015   | 10/6/2015     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-6      | DR1-6, DR1-6-EBT-11, 20130816           | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-1A     | DR1-1A, DR1-1A-LB-16, 20121019          | 10/19/2012  | 10/19/2012    | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-1      | DR2-1, DR2-1-LS-17, 20130410            | 4/10/2013   | 4/10/2013     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR2-6      | DR2-6, DR2-6-LA-22, 20151007            | 10/7/2015   | 10/7/2015     | 82608/50308/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval, 1,2,4-Trimethylbenzene, 95-63-6 | 0.25                 | 0           | DR1-7      | DR1-7, DR1-7-LB-20, 20141019            | 10/19/2014  |               |                      |        |            |                        |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was sampled.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                          | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                           | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                   | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|----------|-------------------------------------|-------------|---------------|-------------------|--------|------------|------------------------|---------|-----------|------------------------|
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.87                 | 1           | DR1-5A   | DR1-5A, DR1-5A-EBT-17, 20140806     | 8/6/2014    | 8/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.31                 | 1           | W101-03A | W101-03A, W101-03A-EBT-13, 20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-2    | DR1-2, DR1-2-LB-20, 20141018        | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | W101-03A | W101-03A, W101-03A-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 4.01                 | 1           | DR1-5A   | DR1-5A, DR1-5A-EBT-15, 20140207     | 2/7/2014    | 2/7/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-1A   | DR1-1A, DR1-1A-LB-24, 20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-2    | DR1-2, DR1-2-LA-22, 20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.25                 | 0           | W101-02A | W101-02A, W101-02A-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.76                 | 1           | DR1-5A   | DR1-5A, DR1-5A-EBT-18, 20141107     | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-5    | DR2-5, DR2-5-LB-16, 20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-1A   | DR1-1A, DR1-1A-LB-20, 20141018      | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | W101-03A | W101-03A, W101-03A-EBT-11, 20130207 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 12.5                 | 0           | W101-04A | W101-04A, W101-04A-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 12.5                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-8    | DR1-8, DR1-8-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.25                 | 0           | W101-04B | W101-04B, W101-04B-EBT-13, 20130818 | 8/18/2013   | 8/18/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-4    | DR2-4, DR2-4-LB-20, 20141028        | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.5                  | 0           | DR1-5    | DR1-5, DR1-5-LS-23, 20160424        | 4/24/2016   | 4/24/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-2    | DR2-2, DR2-2-LS-25, 20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-3    | DR1-3, DR1-3-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 12.5                 | 0           | W101-04A | W101-04A, W101-04A-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 12.5                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.5                  | 0           | W101-03A | W101-03A, W101-03A-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.5                  | 0           | DR2-5    | DR2-5, DR2-5-EBT-16, 20140512       | 5/12/2014   | 5/12/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | UJ        | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.25                 | 0           | DR2-5    | DR2-5, DR2-5-LB-24, 20161017        | 10/17/2016  | 10/17/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.42                 | 1           | DR1-5A   | DR1-5A, DR1-5A-LB-24, 20161106      | 11/10/2016  | 10/12/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | J         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.5                  | 0           | DR1-6A   | DR1-6A, DR1-6A-LS-23, 20160424      | 4/24/2016   | 4/24/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 5                    | 0           | W101-04A | W101-04A, W101-04A-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 5                      |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | W101-02B | W101-02B, W101-02B-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.5                  | 0           | DR1-01A  | DR1-01A, W101-01A-EBT-18, 20140508  | 5/8/2014    | 5/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-4    | DR2-4, DR2-4-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-2    | DR2-2, DR2-2-EBT-11, 20130209       | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.25                 | 0           | W101-02A | W101-02A, W101-02A-EBT-18, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.5                  | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-17, 20140808     | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 5                    | 0           | DR1-6A   | DR1-6A, DR1-6A-EBT-18, 20141107     | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 5                      |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-5    | DR2-5, DR2-5-EBT-17, 20140811       | 8/11/2014   | 8/11/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR1-2    | DR1-2, DR1-2-LB-24, 20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 6.25                 | 0           | W101-02C | W101-02C, W101-02C-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 6.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.25                 | 0           | W101-02A | W101-02A, W101-02A-EBT-18, 20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | DR2-3    | DR2-3, DR2-3-LS-25, 20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 2.5                  | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-11, 20130206     | 2/6/2013    | 2/6/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1.25                 | 0           | PMW82-03 | PMW82-03, PMW82-03-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-01 | PMW82-01, PMW82-01-LS-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW21-05 | PMW21-05, PMW21-05-LS-21, 20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-05 | PMW85-05, PMW85-05-EBT-15, 20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-03 | PMW82-03, PMW82-03-LB-23, 20130813  | 8/13/2013   | 8/13/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-01 | PMW85-01, PMW85-01-LS-23, 20130329  | 3/29/2013   | 3/29/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 5                    | 0           | PMW82-03 | PMW82-03, PMW82-03-LB-17, 20140811  | 8/11/2014   | 8/11/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 5                      |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 1                    | 0           | PMW82-02 | PMW82-02, PMW82-02-LS-17, 20130411  | 4/11/2013   | 4/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 1                      |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-03 | PMW82-03, PMW82-03-EBT-12, 20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-05 | PMW85-05, PMW85-05-LB-24, 20161106  | 11/10/2016  | 11/10/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-01 | PMW85-01, PMW85-01-LS-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW21-05 | PMW21-05, PMW21-05-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-02 | PMW82-02, PMW82-02-LA-22, 20150048  | 10/6/2015   | 10/6/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-05 | PMW85-05, PMW85-05-LB-24, 20161106  | 11/10/2016  | 11/10/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-05 | PMW85-05, PMW85-05-EBT-12, 20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-05 | PMW85-05, PMW85-05-LS-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW21-05 | PMW21-05, PMW21-05-LS-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-05 | PMW85-05, PMW85-05-LB-24, 20161106  | 11/10/2016  | 11/10/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-02 | PMW82-02, PMW82-02-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-03 | PMW82-03, PMW82-03-LB-16, 20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-02 | PMW82-02, PMW82-02-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW85-01 | PMW85-01, PMW85-01-EBT-12, 20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2,4-Trimethylbenzene | 95-63-6 | U         | 0.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6 | 0.25                 | 0           | PMW82-03 | PMW82-03, PMW82-03-EBT-11, 20130329 | 3/29/2013   | 3/29/2013     | 8260B5030B5030C50 | T      | VOC        |                        |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN    | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|----------|-----------|------------------------|
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-100B  | MW-100B_W101-05B-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | W102-02  | W102-02_W102-02-EBT-17_20140812   | 8/12/2014   | 8/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-04A | W121-04A_W121-04A-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 6.25                 | 0           | W105-05  | W105-05_W105-05-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 6.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | W121-02A | W121-02A_W121-02A-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101T  | MW-101T_W101-05A-LB-20_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W101-05A | W101-05A_W101-05A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-100B  | MW-100B_W101-05B-LB-24_20161013   | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-100B  | MW-100B_W101-05B-LB-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101B  | MW-101B_W101-05B-LB-20_20121019   | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | W121-04A | W121-04A_W121-04A-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-02A | W121-02A_W121-02A-EBT-12_20130510 | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101B  | MW-101B_W101-05B-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | W105-05  | W105-05_W105-05-EBT-11_20130211   | 2/11/2013   | 2/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-01B | W121-01B_W121-01B-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-04B | W121-04B_W121-04B-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-04B | W121-04B_W121-04B-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-100B  | MW-100B_W101-05B-LB-20_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | W101-04C | W101-04C_W101-04C-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | MW-100B  | MW-100B_W101-05B-LB-20_20120423   | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-103   | MW-103_W103-LB-24_20161015        | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-15_20140208 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-04C | W101-04C_W101-04C-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 6.25                 | 0           | W121-04B | W121-04B_W121-04B-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 6.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W121-01B | W121-01B_W121-01B-EBT-17_20140804 | 8/4/2014    | 8/4/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W102-02  | W102-02_W102-02-EBT-16_20140207   | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-04C | W101-04C_W101-04C-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | W121-01B | W121-01B_W121-01B-EBT-18_20141105 | 11/5/2014   | 11/5/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W102-02  | W102-02_W102-02-EBT-14_20131107   | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-18_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101T  | MW-101T_W101-05B-LB-16_20121019   | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-01B | W121-01B_W121-01B-EBT-15_20140206 | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | W101-04C | W101-04C_W101-04C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101T  | MW-101T_W101-05B-LB-20_20121019   | 10/7/2012   | 10/7/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-04B | W121-04B_W121-04B-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-04B | W121-04B_W121-04B-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | W121-04B | W121-04B_W121-04B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-02A | W121-02A_W121-02A-EBT-16_20140207 | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | W101-04C | W101-04C_W101-04C-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | W102-02  | W102-02_W102-02-EBT-13_20130814   | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-100B  | MW-100B_W101-05B-LB-20_20120423   | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101B  | MW-101B_W101-05B-LB-20_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-103   | MW-103_W103-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-17_20140804 | 8/4/2014    | 8/4/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W102-02  | W102-02_W102-02-EBT-18_20141110   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | W102-02  | W102-02_W102-02-EBT-16_20140207   | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | W105-05  | W105-05_W105-05-EBT-14_20131106   | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-02A | W121-02A_W121-02A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | W121-04A | W121-04A_W121-04A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-02A | W121-02A_W121-02A-EBT-17_20140805 | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-100B  | MW-100B_W101-05B-LB-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-101B  | MW-101B_W101-05B-LB-20_20120423   | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-01B | W121-01B_W121-01B-EBT-11_20130205 | 2/5/2013    | 2/5/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W121-02A | W121-02A_W121-02A-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W102-08  | W102-08_W1                        |             |               |                      |        |            |                    |          |           |                        |

TABLE B.4  
PROJUL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                        | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN    | Qualifier | Detection Limit (µg/L) |
|-------------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|----------|-----------|------------------------|
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-L5-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LB-20_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 2.5                  | 0           | MW-213   | MW-213_MW-213-EBT-12_20140810  | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 2.5                  | 0           | MW-213   | MW-213_MW-213-L5-23_20160424   | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-L5-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-L5-25_20170419 | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-213   | MW-213_MW-213-LB-16_20121022   | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-213   | MW-213_MW-213-L5-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 1.25                 | 0           | MW-213   | MW-213_MW-213-LB-24_20161017   | 10/17/2016  | 10/17/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.532                | 1           | MW-212   | MW-212_MW-212-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-20_20121120 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-L5-19_20140426 | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-L5-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.458                | 1           | MW-218   | MW-218_MW-218-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.439                | 1           | MW-218   | MW-218_MW-218-L5-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-L5-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.405                | 1           | MW-218   | MW-218_MW-218-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.348                | 1           | MW-2078  | MW-2078_MW-2078-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 1.25                 | 0           | MW-213   | MW-213_MW-213-L5-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 3.03                 | 1           | MW-2078  | MW-2078_MW-2078-LB-16_20141021 | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 2.9                  | 1           | MW-2078  | MW-2078_MW-2078-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2068  | MW-2068_MW-2068-L5-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-L5-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-L5-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.67                 | 1           | MW-218   | MW-218_MW-218-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-20_20141021 | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.503                | 1           | MW-218   | MW-218_MW-218-L5-23_20170421   | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 1.69                 | 1           | MW-2078  | MW-2078_MW-2078-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 2.86                 | 1           | MW-2078  | MW-2078_MW-2078-L5-17_20130411 | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.5                    |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.43                 | 1           | MW-218   | MW-218_MW-218-L5-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-20_20150410 | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-14_20131111  | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-24_20130211   | 2/11/2013   | 2/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-20_20141020 | 4/20/2014   | 4/20/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2068  | MW-2068_MW-2068-L5-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2068  | MW-2068_MW-2068-L5-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 1.02                 | 0           | MW-2078  | MW-2078_MW-2078-L5-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-L5-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.352                | 1           | MW-217   | MW-217_MW-217-LA-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-12_20130510    | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 1.35                 | 0           | MW-218   | MW-218_MW-218-LB-20_20141020   | 4/20/2014   | 4/20/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-13_20130817    | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.814                | 1           | MW-21    | MW-21_MW-21-L5-15_20120421     | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.495                | 1           | MW-21    | MW-21_MW-21-EBT-11_20130307    | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-24_20130411   | 4/21/2013   | 4/21/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-L5-25_20170422 | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.328                | 1           | MW-217   | MW-217_MW-217-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-17_20140810  | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 0.25                   |
| Fluval_1,2-Dichloroethane, 107-06   |                      |             |          |                                |             |               |                      |        |            |                    |          |           |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                        | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN    | Qualifier | Detection Limit (µg/L) |
|------------------------------------|----------------------|-------------|----------|----------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|----------|-----------|------------------------|
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-280   | MW-280_MW280-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-271   | MW-271_MW-271-SR1Phase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-50    | MW-50_MW-50-LB-18_20131011       | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-64    | MW-64_MW-64-LB-19_20140425       | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-52    | MW-52_MW52-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-261   | MW-261_MW261-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.11                 | 1           | MW-259   | MW-259_MW-259-LB-21_20150410     | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-85    | MW-85_MW-85-LB-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-52    | MW-52_MW-52-LB-16_20121019       | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LA-18_20131012     | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-52    | MW-52_MW-52-LA-18_20131011       | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-39    | MW-39_MW-39-LA-18_20131011       | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-25A   | MW-25A_MW25A-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-25A   | MW-25A_MW-25A-LB-16_20131011     | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-85    | MW-85_MW-85-LB-25_20170419       | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-19_20140425     | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-261   | MW-261_MW-261-LA-18_20131011     | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-21_20150410     | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-85    | MW-85_MW-85-LB-25_20170419       | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-64    | MW-64_MW-64-LB-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-261   | MW-261_MW-261-LB-24_20161014     | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-25A   | MW-25A_MW-25A-LB-24_20131011     | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-85    | MW-85_MW-85-LB-25_20170419       | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-25_20170419     | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-50    | MW-50_MW-50-LB-16_20121019       | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-281   | MW-281_MW281-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-281   | MW-281_MW-281-LB-20_20141021     | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-64    | MW-64_MW-64-LB-23_20160421       | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-25A   | MW-25A_MW25A-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.3                  | 1           | MW-259   | MW-259_MW-259-LB-20_20150410     | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-267   | MW-267_MW-267-LB-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-88    | MW-88_MW-88-LB-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.35                 | 1           | MW-269   | MW-269_MW-269-LB-23_20160423     | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-88    | MW-88_MW-88-LB-25_20170419       | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.941                | 1           | MW-269   | MW-269_MW-269_20150731           | 7/31/2015   | 7/31/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-62    | MW-62_MW-62-LB-15_20120421       | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-265   | MW-265_MW-265-SR1Phase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-267   | MW-267_MW-267-LB-24_20161015     | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-SR1Phase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-63B   | MW-63B_MW-63B-LA-18_20131012     | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LB-24_20161014     | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LB-25_20170419     | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LB-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LB-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.15                 | 1           | MW-269   | MW-269_MW-269-LA-22_20151008     | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.45                 | 1           | MW-259   | MW-259_MW-259-LB-21_20151007     | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LB-16_20121021     | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LB-23_20160422     | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-62    | MW-62_MW-62-LB-25_20170421       | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LB-24_20161014     | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-88    | MW-88_MW-88-LB-19_20140426       | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-267   | MW-267_MW-267-LB-24_20161015     | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.391                | 1           | MW-64    | MW-64_MW-64-LA-18_20131012       | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.15                 | 1           | MW-269   | MW-269_MW-269-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-63B   | MW-63B_MW-63B-LB-20_20141021     | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.389                | 1           | MW-259   | MW-259_MW-259-LB-20_20151007     | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 |                      |             |          |                                  |             |               |                      |        |            |                    |          |           |                        |



TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HAZARDOUS AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                                | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN    | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|------------|------------------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|----------|-----------|------------------------|
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-14, 20131109  | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-18, 20141105      | 11/5/2014   | 11/5/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-98      | MW-98, MW-98-L5-23, 20150422             | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-LB-24, 20161013       | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW94A-LA-22, 20151008            | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-17, 20140805      | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-13, 20130816  | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | PWW101-02A | PWW101-02A, PWW101-02A-L5-23, 20160423   | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-07B | PWW101-07B, PWW101-07B-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LB-24, 20160105           | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-L5-23R6, 20160523     | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-13, 20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-L5-25, 20170420       | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-12, 20130513  | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-14, 20131108      | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-18, 20141108  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LB-18, 20131012           | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-EBT-12, 20130511      | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-11, 20130206  | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-05   | PWW21-05, PWW21-05-L5-19, 20140406       | 4/6/2014    | 4/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-LB-24, 20161013       | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-EBT-13, 20130818      | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-L5-23R6, 20160523     | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-02A | PWW101-02A, PWW101-02A-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-18, 20141107  | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-11, 20130205      | 2/5/2013    | 2/5/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-15, 20140206      | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-L5-19, 20140109           | 4/21/2014   | 4/21/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-92      | MW-92, MW92-L5-21, 20150410              | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-12, 20130511      | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-03   | PWW21-03, PWW21-03-LA-18, 20131012       | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-98      | MW-98, MW-98-L5-19, 20140425             | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW94A-LB-20, 20141020            | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-17, 20140808  | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-07B | PWW101-07B, PWW101-07B-L5-23, 20160424   | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-13, 20130811      | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-15, 20140208  | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-14, 20131107      | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-16, 20140509  | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | PWW21-05   | PWW21-05, PWW21-05-L5-17, 20140411       | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LB-14, 20131019           | 4/12/2014   | 4/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-07B | PWW101-07B, PWW101-07B-L5-25, 20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-EBT-11, 20130207      | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LB-12, 20121021           | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-03   | PWW21-03, PWW21-03-L5-22, 20140407       | 4/7/2014    | 4/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-16, 20140507      | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-05   | PWW21-05, PWW21-05-L5-15, 20120423       | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-92      | MW-92, MW-92-LA-18, 20131012             | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-07B | PWW101-07B, PWW101-07B-EBT-17, 20140808  | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-EBT-17, 20140805      | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-EBT-15, 20140206      | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW101-02A | PWW101-02A, PWW21-01-EBT-15-25, 20170421 | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-01   | PWW21-01, PWW21-01-EBT-18, 20141105      | 11/5/2015   | 11/5/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-02   | PWW21-02, PWW21-02-EBT-18, 20140508      | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-98      | MW-98, MW-98-LB-24, 20161015             | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-92      | MW-92, MW-92-L5-23, 20160420             | 4/20/2016   | 4/20/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-92      | MW-92, MW-98-L5-19, 20140425             | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-98      | MW-98, MW-98-L5-19, 20140425             | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-98      | MW-98, MW-98-L5-25, 20170420             | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | MW-98      | MW-98, MW98-L5-21, 20150409              | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PWW21-03   | PWW21-03, PWW21-03-LB-16, 20121019       | 10/19/2012  | 10/19/2012    | 8260B/               |        |            |                    |          |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN    | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|----------|-----------|------------------------|
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-1    | DR2-1, DR2-1-LS-21, 20150410        | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-LB-24, 20161013      | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-03A | W101-03A, W101-03A-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-LB-16, 20121020      | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-03A | W101-03A, W101-03A-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-1    | DR2-1, DR2-1-LS-23, 20160421        | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | DR2-4    | DR2-4, DR2-4-LB-22, 20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-LS-15, 20120422      | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-18, 20141107     | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | W101-03A | W101-03A, W101-03A-EBT-13, 20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-LS-19, 20120120        | 4/24/2012   | 4/24/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | DR1-6    | DR1-6, DR1-6-EBT-17, 20140807       | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-02B | W101-02B, W101-02B-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-1    | DR2-1, DR2-1-LB-16, 20121021        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-LS-15, 20120120        | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.364                | 1           | DR2-4    | DR2-4, DR2-4-LB-22, 20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-02B | W101-02B, W101-02B-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-LB-24, 20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-LB-16, 20121020        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-02B | W101-02B, W101-02B-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-LS-23, 20160424        | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | DR1-6    | DR1-6, DR1-6-EBT-18, 20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | DR1-6    | DR1-6, DR1-6-EBT-13, 20130816       | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-1    | DR2-1, DR2-1-LB-20, 20141020        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-EBT-12, 20130512       | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | W101-02C | W101-02C, W101-02C-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-6    | DR2-6, DR2-6-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-EBT-16, 20140508       | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-3    | DR2-3, DR2-3-LS-19, 20140424        | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-02C | W101-02C, W101-02C-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-1    | DR2-1, DR2-1-LB-24, 20161015        | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-EBT-15, 20120120       | 2/9/2012    | 2/9/2012      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-02C | W101-02C, W101-02C-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 12.5                 | 0           | DR2-5    | DR2-5, DR2-5-LS-25, 20170422        | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 12.5                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-6    | DR1-6, DR1-6-EBT-14, 20131109       | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-02B | W101-02B, W101-02B-EBT-18, 20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-11, 20130207     | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | DR2-2    | DR2-2, DR2-2-EBT-11, 20130209       | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-03B | W101-03B, W101-03B-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-03A | W101-03A, W101-03A-EBT-18, 20140508 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | DR2-2    | DR2-2, DR2-2-EBT-14, 20131107       | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | DR2-2    | DR2-2, DR2-2-EBT-18, 20141110       | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | DR2-5    | DR2-5, DR2-5-EBT-18, 20141111       | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-11, 20130207     | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-13, 20130820     | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-03A | W101-03A, W101-03A-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 1.25                 | 0           | DR2-2    | DR2-2, DR2-2-EBT-13, 20130814       | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 1.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-5    | DR2-5, DR2-5-LS-23, 20160422        | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 5                    | 0           | DR2-5    | DR2-5, DR2-5-EBT-17, 20140811       | 8/11/2014   | 8/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 5                      |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-11, 20130206     | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-03A | W101-03A, W101-03A-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.5                  | 0           | W101-03A | W101-03A, W101-03A-EBT-18, 20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | DR2-5    | DR2-5, DR2-5-EBT-16, 20140512       | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | UJ        | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-1    | DR2-1, DR2-1-LS-25, 20170419        | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5    | DR1-5, DR1-5-LS-15, 20120422        | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 2.5                  | 0           | W101-03B | W101-03B, W101-03B-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 2.5                    |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | W101-03A | W101-03A, W101-03A-EBT-18, 20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5A   | DR1-5A, DR1-5A-EBT-16, 20140508     | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.436                | 1           | DR2-5    | DR2-5, DR2-5-LB-16, 20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | J         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR2-2    | DR2-2, DR2-2-EBT-12, 20130510       | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | DR1-5    | DR1-5, DR1-5-LS-25, 20170422        | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane | 107-06-2 | U         | 0.25                   |
| Fluval_1.2-Dichloroethane_107-06-2 | 0.25                 | 0           | PMW85-01 | PMW85-01, PMW85-01-LS-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      |            |                    |          |           |                        |



TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJCL Group                       | ProJCL Result (ug/L) | ProJCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|-------------------|--------|------------|---------------------|---------|-----------|------------------------|
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-03B | W121-03B_W101-05C-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05C | W101-05C_W101-05C-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04A | W121-04A_W101-05C-EBT-11_20130206 | 2/6/2014    | 2/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05C | W101-05C_W101-05C-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05C | W101-05C_W101-05C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05C | W101-05C_W101-05C-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-03B | W121-03B_W101-05C-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05C | W101-05C_W101-05C-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-03B | W121-03B_W101-05C-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-07B | W101-07B_W101-05C-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05C | W101-05C_W101-05C-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-01B | W101-01B_W101-05C-EBT-12_20160423 | 4/23/2016   | 4/23/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | W121-04A | W121-04A_W101-05C-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 4                    | 1           | W102-08  | W102-08_W102-08-EBT-12_20130509   | 5/9/2013    | 5/9/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | W121-04B | W121-04B_W101-05C-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04B | W121-04B_W101-05C-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05A | W101-05A_W101-05A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 4                    | 0           | W121-04B | W121-04B_W101-05C-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 4                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 10                   | 0           | W101-04C | W101-04C_W101-04C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 10                     |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04B | W121-04B_W101-05C-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 10                   | 0           | W101-04C | W101-04C_W101-04C-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 10                     |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-00B | W101-00B_W100B-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 10                   | 0           | W102-08  | W102-08_W102-08-EBT-17_20140811   | 8/11/2014   | 8/11/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 10                     |
| Fluval_1,2-Dichloropropane_78-87.5 | 10                   | 0           | W101-04C | W101-04C_W101-04C-EBT-14_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 10                     |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-10T | W101-10T_W101T-LB-24_20161014     | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04B | W121-04B_W101-05C-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 5                    | 0           | W105-05  | W105-05_W105-05-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 5                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 4                    | 0           | W101-04C | W101-04C_W101-04C-EBT-11_20130206 | 2/6/2014    | 2/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 4                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-00B | W101-00B_W100B-LB-15_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04B | W121-04B_W101-05C-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-04C | W101-04C_W101-04C-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04B | W121-04B_W101-05C-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-10T | W101-10T_W101T-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-10T | W101-10T_W101T-LA-18_20131012     | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05A | W101-05A_W101-05A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-05B | W101-05B_W101-05B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04A | W121-04A_W101-05C-EBT-15_20140205 | 2/7/2014    | 2/7/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-10T | W101-10T_W101T-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05A | W101-05A_W101-05A-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05A | W101-05A_W101-05A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-00B | W101-00B_W100B-LB-20_20141018     | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-01B | W101-01B_W101-01B-EBT-13_20140118 | 1/18/2014   | 1/18/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-01B | W101-01B_W101-01B-EBT-15_20170421 | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05A | W101-05A_W101-05A-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-00B | W101-00B_W100B-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W105-05  | W105-05_W105-05-EBT-15_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W101-05A | W101-05A_W101-05A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 4                    | 0           | W121-04A | W121-04A_W101-05C-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 4                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-00B | W101-00B_W100B-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 10                   | 0           | W101-05A | W101-05A_W101-05A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 10                     |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-00B | W101-00B_W100B-LB-19_20140426     | 4/26/2014   | 4/26/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | W101-05A | W101-05A_W101-05A-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 10                   | 0           | W105-05  | W105-05_W105-05-EBT-11_20130211   | 2/11/2013   | 2/11/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 10                     |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04B | W121-04B_W101-05C-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | W102-08  | W102-08_W102-08-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-04A | W121-04A_W101-05C-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W121-03A | W121-03A_W101-05A-EBT-14_20141105 | 11/5/2014   | 11/5/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W105-07  | W105-07_W105-07-EBT-13_20140118   | 1/18/2014   | 1/18/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-10A | W101-10A_W101-10A-EBT-15_20170420 | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | W101-07A | W101-07A_W101-07A-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 4                    | 0           | W102-07  | W102-07_W102-07-EBT-17_20140812   | 8/12/2014   | 8/12/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 4                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W105-06  | W105-06_W105-06-EBT-16_20140512   | 5/12/2014   | 5/12/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 2                    | 0           | W102-07  | W102-07_W102-07-EBT-15_20140205   | 2/5/2014    | 2/5/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87.5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 4                    | 0           | W121-03B | W121-03B_W101-05C-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B5030C50 | T      |            |                     |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                | CASRN   | Qualifier | Detection Limit (µg/L) |
|------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|---------------------|--------|------------|---------------------|---------|-----------|------------------------|
| Fluval_1,2-Dichloropropane_78-87-5 | 0.438                | 1           | MW-113   | MW-113_MW-113-L5-25_20160421    | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2048  | MW-2048_MW-2048-L5-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2038  | MW-2038_MW-2038-E8-14_20131107  | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-1978  | MW-1978_MW-1978-E8T-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-198   | MW-198_MW-198-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-143   | MW-143_MW-143-L5-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-1988  | MW-1988_MW-1988-L5-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | MW-213   | MW-213_MW-213-E8T-14_20131111   | 11/11/2013  | 11/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-216   | MW-216_MW-216-LA-18_20130111    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-E8T-16_20140511   | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-L5-25_20120422    | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-18_20141109   | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | MW-213   | MW-213_MW-213-L5-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-L5-25_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2108  | MW-2108_MW-2108-LB-16_20130824  | 8/24/2013   | 8/24/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-LB-16_20121022    | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.367                | 1           | MW-217   | MW-217_MW-217-L5-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-216   | MW-216_MW-216-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2158  | MW-2158_MW-2158-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.485                | 1           | MW-218   | MW-218_MW-218-LA-18_20131022    | 10/22/2013  | 10/22/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-14_20131111   | 11/11/2013  | 11/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | MW-213   | MW-213_MW-213-E8T-15_20140211   | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-L5-23_20160424    | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-217   | MW-217_MW-217-L5-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.416                | 1           | MW-218   | MW-218_MW-218-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-217   | MW-217_MW-217-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2158  | MW-2158_MW-2158-LB-16_20130824  | 8/24/2013   | 8/24/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2158  | MW-2158_MW-2158-LB-20_20141021  | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-216   | MW-216_MW-216-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-L5-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-216   | MW-216_MW-216-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.363                | 1           | MW-217   | MW-217_MW-217-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.285                | 1           | MW-217   | MW-217_MW-217-L5-21_20150410    | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.279                | 1           | MW-217   | MW-217_MW-217-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | MW-213   | MW-213_MW-213-LB-24_20161017    | 10/17/2016  | 10/17/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-LB-16_20121022    | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-16_20140510   | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-E8T-11_20130211   | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.202                | 1           | MW-217   | MW-217_MW-217-L5-21_20150410    | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-12_20130511   | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 2                    | 0           | MW-213   | MW-213_MW-213-E8T-18_20141109   | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.489                | 1           | MW-218   | MW-218_MW-218-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-15_20140211   | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-213   | MW-213_MW-213-L5-15_20120421    | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-217   | MW-217_MW-217-L5-25_20170419    | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.298                | 1           | MW-217   | MW-217_MW-217-L5-19_20140424    | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2158  | MW-2158_MW-2158-LB-16_20130824  | 8/24/2013   | 8/24/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 2                    | 0           | MW-213   | MW-213_MW-213-E8T-17_20140810   | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.475                | 1           | MW-217   | MW-217_MW-217-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.386                | 1           | MW-217   | MW-217_MW-217-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-11_20130211   | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-212   | MW-212_MW-212-E8T-17_20140810   | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | MW-213   | MW-213_MW-213-E8T-12_20130511   | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2158  | MW-2158_MW-2158-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.525                | 1           | MW-218   | MW-218_MW-218-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.506                | 1           | MW-218   | MW-218_MW-218-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-21    | MW-21_MW-21-E8T-12_20130510     | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2088  | MW-2088_MW-2088-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-219   | MW-219_MW-219-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-2108  | MW-2108_MW-2108-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.507                | 1           | MW-2088  | MW-2088_MW-2088-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-21    | MW-21_MW-21-E8T-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-22    | MW-22_MW-22-LB-24_20161016      | 10/16/2016  | 10/16/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         |                        |

TABLE B.4  
PROJUL.S.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                | CASRN   | Qualifier | Detection Limit (µg/L) |
|------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|----------------------|--------|------------|---------------------|---------|-----------|------------------------|
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-26    | MW-26_MW-26-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LS-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.454                | 1           | MW-85    | MW-85_MW-85-EBT-15_20140205     | 2/5/2014    | 2/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-88    | MW-88_MW-88-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-25A   | MW-25A_MW-25A-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-64    | MW-64_MW-64-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-25A   | MW-25A_MW-25A-LA-18_20121019    | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-267   | MW-267_MW-267-SRHPase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.517                | 1           | MW-259   | MW-259_MW-259-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-25A   | MW-25A_MW-25A-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LB-20_20140101      | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-63A   | MW-63A_MW-63A-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-25A   | MW-25A_MW-25A-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-258   | MW-258_MW-258-LS-15_20150402    | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-258   | MW-258_MW-258-LB-20_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-260   | MW-260_MW-260-LS-21_20150410    | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.335                | 1           | MW-85    | MW-85_MW-85-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-281   | MW-281_MW-281-SR11216_20161209  | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-94    | MW-94_MW-94-LS-23_20140402      | 4/2/2014    | 4/2/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-266   | MW-266_MW-266-LS-23_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.51                 | 1           | MW-259   | MW-259_MW-259-LS-25_20170419    | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-26    | MW-26_MW-26-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.356                | 1           | MW-85    | MW-85_MW-85-EBT-11_20130308     | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-26    | MW-26_MW-26-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-259   | MW-259_MW-259-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.246                | 1           | MW-85    | MW-85_MW-85-LS-15_20120421      | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.794                | 1           | MW-85    | MW-85_MW-85-EBT-17_20140810     | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-260   | MW-260_MW-260-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-267   | MW-267_MW-267-LB-20_20151007    | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-25A   | MW-25A_MW-25A-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-39    | MW-39_MW-39-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-260   | MW-260_MW-260-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-63A   | MW-63A_MW-63A-LB-20_20141021    | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-85    | MW-85_MW-85-EBT-18_20141015     | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 1           | MW-267   | MW-267_MW-267-LS-23_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-88    | MW-88_MW-88-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-EBT-17_20140810     | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 2                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-98    | MW-98_MW-98-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | MW-258   | MW-258_MW-258-LS-17_20130411    | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.362                | 1           | MW-259   | MW-259_MW-259-LS-15_20120422    | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-257   | MW-257_MW-257-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-94    | MW-94_MW-94-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-269   | MW-269_MW-269-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | MW-62    | MW-62_MW-62-EBT-15_20140211     | 2/11/2014   | 2/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-271   | MW-271_MW-271-LS-25_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-26    | MW-26_MW-26-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-LS-15_20120421      | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-270   | MW-270_MW-270-LS-23_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-265   | MW-265_MW-265-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-270   | MW-270_MW-270-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-64    | MW-64_MW-64-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 1                    | 0           | MW-62    | MW-62_MW-62-EBT-12_20130509     | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-271   | MW-271_MW-271-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-257   | MW-257_MW-257-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-LB-24_20161014      | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-64    | MW-64_MW-64-LS-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-64    | MW-64_MW-64-LB-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-263   | MW-263_MW-263-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-62    | MW-62_MW-62-EBT-14_20131111     | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-265   | MW-265_MW-265-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87.5 | 0.2                  | 0           | MW-269   | MW-269_MW-2                     |             |               |                      |        |            |                     |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                                | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|------------|------------------------------------------|-------------|---------------|----------------------|--------|------------|---------------------|---------|-----------|------------------------|
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04A | PMW101-04A, PMW101-04A-LB-16, 20121022   | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-18, 20141108  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04A | PMW101-04A, PMW101-04A-LB-16, 20121022   | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-03   | PMW21-03, PMW21-03-L5-23, 20160423       | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 2                    | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-18, 20141105      | 11/5/2014   | 11/5/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-03A | PMW101-03A, PMW101-03A-L5-25, 20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-03B | PMW101-03B, PMW101-03B-L5-25, 20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-02   | PMW21-02, PMW21-02-L5-23RE, 20160523     | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | PMW101-06A | PMW101-06A, PMW101-06A-L5-17, 20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-13, 20130818      | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-05   | PMW21-05, PMW21-05-L5-21, 20150408       | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-03   | PMW21-03, PMW21-03-L5-25, 20170420       | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-L5-19, 20140426   | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L5-25, 20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 1                    | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-17, 20140805      | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04A | PMW101-04A, PMW101-04A-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-01   | PMW21-01, PMW21-01-L5-23RE, 20160523     | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-05   | PMW21-05, PMW21-05-L5-17, 20130411       | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-12, 20130513  | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.481                | 1           | MW-94A     | MW-94A, MW-94A-LA-18, 20131012           | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-14, 20131108      | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-04   | PMW21-04, PMW21-04-EBT-13, 20130817      | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-LB-20, 20140207             | 10/9/2014   | 10/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04B | PMW101-04B, PMW101-04B-L5-15, 20120422   | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-03A | PMW101-03A, PMW101-03A-L5-21, 20150408   | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-01   | PMW21-01, PMW21-01-LB-24, 20161013       | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.263                | 0           | MW-94A     | MW-94A, MW-94A-LA-18, 20131012           | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-97      | MW-97, MW-97-L5-21, 20150408             | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-98      | MW-98, MW-98-L5-23, 20160422             | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04B | PMW101-04B, PMW101-04B-L5-25, 20160423   | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-98      | MW-98, MW-98-LA-18, 20131012             | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-96      | MW-96, MW-96-LB-20, 20141020             | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-04B | PMW101-04B, PMW101-04B-L5-25, 20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-03A | PMW101-03A, PMW101-03A-L5-23, 20160423   | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-18, 20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-92      | MW-92, MW-92-L5-21, 20150408             | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-94A     | MW-94A, MW-94A-L5-21, 20150409           | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-11, 20130206  | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-12, 20130512  | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-L5-25, 20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-L5-25, 20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-98      | MW-98, MW-98-LB-16, 20121020             | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-03   | PMW21-03, PMW21-03-LB-20, 20140118       | 1/18/2014   | 1/18/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-94A     | MW-94A, MW-94A-LA-18, 20131012           | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 2                    | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-12, 20130513  | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | MW-94A     | MW-94A, MW-94A-LB-20, 20141020           | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-18, 20141108  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-L5-25, 20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-L5-23, 20160424   | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-15, 20140207  | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-L5-25, 20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-18, 20141108  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.353                | 1           | MW-94A     | MW-94A, MW-94A-L5-17, 20130410           | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-03   | PMW21-03, PMW21-03-LB-24, 20161013       | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-12, 20130512  | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW21-05   | PMW21-05, PMW21-05-LB-20, 20140118       | 1/18/2014   | 1/18/2014     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-14, 20131110  | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-L5-25RE, 20170421 | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5 | 0.2                  | 0           |            |                                          |             |               |                      |        |            |                     |         |           |                        |

TABLE B.4  
PROJULS 1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                         | ProUCL Result (ug/L) | ProUCL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                | CASRN   | Qualifier | Detection Limit (ug/L) |
|--------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|-------------------|--------|------------|---------------------|---------|-----------|------------------------|
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-L5-21_20140828          | 4/8/2015    | 4/8/2015      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-L5-15_20120423          | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LB-24_20161016          | 10/16/2016  | 10/16/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 4                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 4                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LB-20_20141019          | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-3     | DR1-3_DR1-3-LA-22_20131007          | 10/7/2013   | 10/7/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 4                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 4                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 5                    | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 5                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-14_20131110 | 11/10/2013  | 10/20/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-17_20141107       | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-L5-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-LB-24_20161023          | 10/23/2016  | 10/23/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-LB-16_20121020          | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-18_20141106         | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-2     | DR1-2_DR1-2-LA-16_20151007          | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | UJ        | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-17_20140806         | 8/6/2014    | 8/6/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-16_20140508         | 5/8/2014    | 5/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 1           | DR1-4     | DR1-4_DR1-4-LA-22-15_20170420       | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.4                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-15_20140207         | 2/7/2014    | 2/7/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.4                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-L5-15_20120422          | 4/22/2012   | 4/22/2012     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.4                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-14_20131109         | 11/9/2013   | 11/9/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.4                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-2     | DR1-2_DR1-2-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-13_20130820         | 8/20/2013   | 8/20/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-12_20130512         | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-10_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | DR1-5     | DR1-5_DR1-5-EBT-11_20130206         | 2/6/2013    | 2/6/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-4     | DR1-4_DR1-4-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-2     | DR1-2_DR1-2-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-1     | DR1-1_DR1-1-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-4     | DR1-4_DR1-4-L5-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-7     | DR1-7_DR1-7-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-12_20130512       | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 4                    | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 4                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-1     | DR1-1_DR1-1-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-6A    | DR1-6A_DR1-6A-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.233                | 1           | DR2-6     | DR2-6_DR2-6-L5-25_20170419          | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.233                  |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.339                | 1           | DR1-6A    | DR1-6A_DR1-6A-EBT-15_20140209       | 2/9/2014    | 2/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.339                  |
| Fluoride-1,2-Dichloropropane-78-87-5 | 1                    | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 1                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.356                | 1           | DR1-6A    | DR1-6A_DR1-6A-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | J         | 0.356                  |
| Fluoride-1,2-Dichloropropane-78-87-5 | 2                    | 0           | DR1-6A    | DR1-6A_DR1-6A-L5-23_20160424        | 4/24/2016   | 4/24/2016     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 2                      |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.4                  | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-12_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.4                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-1     | DR1-1_DR1-1-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | WI101-02B | WI101-02B_WI101-02B-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-1     | DR1-1_DR1-1-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-7     | DR1-7_DR1-7-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | DR1-6A    | DR1-6A_DR1-6A-L5-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.2                  | 0           | WI101-02B | WI101-02B_WI101-02B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichloropropane | 78-87-5 | U         | 0.2                    |
| Fluoride-1,2-Dichloropropane-78-87-5 | 0.386                | 1           | DR1-6A    | DR1-6A_DR1-6A-EBT-14_20131109       | 11/9/2013   | 11/9/2013     | 8260B5030B5030C50 | T      | VOC        | 1,2-Dichlor         |         |           |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group           | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                            | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------|----------------------|-------------|------------|--------------------------------------|-------------|---------------|---------------------|--------|------------|---------|---------|-----------|------------------------|
| Fluval_Acetonc_67-64-1 | 6.79                 | 1           | MW-101B    | MW-101B_MW101B-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 512                  | 1           | MW-101-03A | MW-101-03A_MW101-03A-EBT-18_20141105 | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 9.11                 | 1           | MW-101B    | MW-101B_MW101B-LB-24_20130411        | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 10                     |
| Fluval_Acetonc_67-64-1 | 293                  | 1           | MW-21-04A  | MW-21-04A_MW21-04A-EBT-13_20130819   | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 50                     |
| Fluval_Acetonc_67-64-1 | 115                  | 1           | MW-21-02B  | MW-21-02B_MW21-02B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 268                  | 1           | MW-85-05   | MW-85-05-EBT-15_20140205             | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 62.5                   |
| Fluval_Acetonc_67-64-1 | 354                  | 1           | MW-21-02A  | MW-21-02A-EBT-17_20140805            | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 12.5                   |
| Fluval_Acetonc_67-64-1 | 3.61                 | 1           | MW-101B    | MW-101B_MW101B-LB-25_20170421        | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 511                  | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 125                    |
| Fluval_Acetonc_67-64-1 | 3.52                 | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 2.5                    |
| Fluval_Acetonc_67-64-1 | 5220                 | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 250                    |
| Fluval_Acetonc_67-64-1 | 630                  | 1           | MW-92-07   | MW-92-07_EBT-11_20130810             | 2/10/2013   | 2/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 50                     |
| Fluval_Acetonc_67-64-1 | 428                  | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 14.4                 | 1           | MW-104     | MW-104_MW104-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 139                  | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 2.5                  | 0           | MW-100B    | MW-100B_MW100B-LB-10_20140119        | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 123                  | 1           | MW-92-07   | MW-92-07_EBT-12_20130508             | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 50                     |
| Fluval_Acetonc_67-64-1 | 649                  | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetonc_67-64-1 | 1420                 | 1           | MW-92-07   | MW-92-07_EBT-13_20130815             | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 131                  | 1           | MW-104     | MW-104_MW104-LB-20_20141020          | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 12                   | 1           | MW-104     | MW-104_MW104-LB-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 522                  | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 580                  | 1           | MW-101-05A | MW-101-05A_MW101-05A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 12.5                   |
| Fluval_Acetonc_67-64-1 | 813                  | 1           | MW-92-07   | MW-92-07_EBT-14_20140107             | 1/7/2014    | 1/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 370                  | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 547                  | 1           | MW-101-05A | MW-101-05A_MW101-05A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 25                     |
| Fluval_Acetonc_67-64-1 | 8.83                 | 1           | MW-100B    | MW-100B_MW100B-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 3270                 | 1           | MW-101-07B | MW-101-07B_MW101-07B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 10                     |
| Fluval_Acetonc_67-64-1 | 467                  | 1           | MW-21-01A  | MW-21-01A_MW21-01A-EBT-14_20131107   | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 2.61                 | 1           | MW-101B    | MW-101B_MW101B-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 951                  | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetonc_67-64-1 | 333                  | 1           | MW-21-01A  | MW-21-01A_EBT-13_20130818            | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 196                  | 1           | MW-92-03   | MW-92-03_EBT-13_20130819             | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetonc_67-64-1 | 707                  | 1           | MW-21-01A  | MW-21-01A_MW21-01A-EBT-12_20130507   | 5/7/2013    | 5/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 6.53                 | 1           | MW-101B    | MW-101B_MW101B-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 25                   | 1           | MW-100B    | MW-100B_MW100B-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 1530                 | 1           | MW-21-01A  | MW-21-01A_EBT-11_20130305            | 3/5/2013    | 3/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 1600                 | 1           | MW-101-04C | MW-101-04C_MW101-04C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 125                    |
| Fluval_Acetonc_67-64-1 | 475                  | 1           | MW-92-03   | MW-92-03_EBT-14_20131106             | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetonc_67-64-1 | 507                  | 1           | MW-101-05A | MW-101-05A_EBT-12_20130513           | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 7.78                 | 1           | MW-100B    | MW-100B_MW100B-LB-10_20141018        | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 5.62                 | 1           | MW-100B    | MW-100B_MW100B-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 5070                 | 1           | MW-92-03   | MW-92-03_EBT-16_20140512             | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 5000                   |
| Fluval_Acetonc_67-64-1 | 551                  | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 50                     |
| Fluval_Acetonc_67-64-1 | 915                  | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-17_20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 50                     |
| Fluval_Acetonc_67-64-1 | 67.7                 | 1           | MW-101-05A | MW-101-05A_MW101-05A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetonc_67-64-1 | 492                  | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 62.5                   |
| Fluval_Acetonc_67-64-1 | 163                  | 1           | MW-92-03   | MW-92-03_EBT-17_20140812             | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetonc_67-64-1 | 14.9                 | 1           | MW-100B    | MW-100B_MW100B-LB-10_20140426        | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 1220                 | 1           | MW-101-07C | MW-101-07C_MW101-07C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 13.9                 | 1           | MW-101B    | MW-101B_MW101B-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 2.5                  | 0           | MW-104     | MW-104_MW104-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 1040                 | 1           | MW-101-05C | MW-101-05C_MW101-05C-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 477                  | 1           | MW-92-07   | MW-92-07_EBT-15_20140205             | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 62.5                   |
| Fluval_Acetonc_67-64-1 | 862                  | 1           | MW-101-05C | MW-101-05C_MW101-05C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 50                     |
| Fluval_Acetonc_67-64-1 | 2.5                  | 0           | MW-101-05B | MW-101-05B_MW101-05B-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 510                  | 1           | MW-101-05C | MW-101-05C_MW101-05C-EBT-16_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 5.28                 | 1           | MW-100B    | MW-100B_MW100B-LB-21_20150408        | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 2.5                    |
| Fluval_Acetonc_67-64-1 | 653                  | 1           | MW-101-05C | MW-101-05C_MW101-05C-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 25                     |
| Fluval_Acetonc_67-64-1 | 1330                 | 1           | MW-92-08   | MW-92-08_EBT-13_20130815             | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 407                  | 1           | MW-101-05C | MW-101-05C_MW101-05C-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 977                  | 1           | MW-101-05A | MW-101-05A_MW101-05A-EBT-11_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 2.5                  | 0           | MW-101-05B | MW-101-05B_MW101-05B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 286                  | 1           | MW-92-08   | MW-92-08_EBT-12_20130509             | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetonc_67-64-1 | 1510                 | 1           | MW-92-08   | MW-92-08_EBT-14_20131106             | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 50                     |
| Fluval_Acetonc_67-64-1 | 198                  | 1           | MW-101-05B | MW-101-05B_MW101-05B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetonc_67-64-1 | 1030                 | 1           | MW-92-08   | MW-92-08_EBT-17_20140811             | 8/11/2014</ |               |                     |        |            |         |         |           |                        |



TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group           | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|---------------------|--------|------------|---------|---------|-----------|------------------------|
| Fluval_Acetone_67-64-1 | 265                  | 1           | MW-2038  | MW-2038_MW-2038-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 6.25                   |
| Fluval_Acetone_67-64-1 | 133                  | 1           | MW-2038  | MW-2038_MW-2038-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetone_67-64-1 | 716                  | 1           | MW-142   | MW-142_MW-142-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 21.3                 | 1           | MW-206A  | MW-206A_MW-206A-L5-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 5.81                 | 1           | MW-143   | MW-143_MW-143-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.63                 | 1           | MW-204B  | MW-204B_MW-204B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-197B  | MW-197B_MW-197B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 4.44                 | 1           | MW-205B  | MW-205B_MW-205B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 33                   | 1           | MW-199B  | MW-199B_MW-199B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 94.4                 | 1           | MW-113   | MW-113_MW-113-EBT-12_20130510   | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetone_67-64-1 | 13.4                 | 1           | MW-143   | MW-143_MW-143-LA-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.74                 | 1           | MW-204B  | MW-204B_MW-204B-L5-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-197B  | MW-197B_MW-197B-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 8.59                 | 1           | MW-204B  | MW-204B_MW-204B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 4.77                 | 1           | MW-143   | MW-143_MW-143-LB-16_20121019    | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.77                 | 1           | MW-205B  | MW-205B_MW-205B-L5-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 26.3                 | 1           | MW-200   | MW-200_MW-200-L5-23_20160421    | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 17.5                 | 1           | MW-199B  | MW-199B_MW-199B-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.94                 | 1           | MW-200   | MW-200_MW-200-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-197B  | MW-197B_MW-197B-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 21.2                 | 1           | MW-206A  | MW-206A_MW-206A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 6.52                 | 1           | MW-142   | MW-142_MW-142-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 617                  | 1           | MW-203B  | MW-203B_MW-203B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetone_67-64-1 | 5.08                 | 1           | MW-204B  | MW-204B_MW-204B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.38                 | 1           | MW-142   | MW-142_MW-142-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-199B  | MW-199B_MW-199B-L5-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 4.01                 | 1           | MW-206A  | MW-206A_MW-206A-L5-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 5.73                 | 1           | MW-199B  | MW-199B_MW-199B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 15                   | 1           | MW-204A  | MW-204A_MW-204A-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 10.1                 | 1           | MW-205B  | MW-205B_MW-205B-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.92                 | 1           | MW-209B  | MW-209B_MW-209B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-22    | MW-22_MW-22-LB-16_20140108      | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 36.5                 | 1           | MW-21    | MW-21_MW-21-EBT-15_20140208     | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-217   | MW-217_MW-217-L5-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-216   | MW-216_MW-216A-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | UJ        | 2.5                    |
| Fluval_Acetone_67-64-1 | 655                  | 1           | MW-213   | MW-213_MW-213-EBT-18_20141109   | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetone_67-64-1 | 5.53                 | 1           | MW-208B  | MW-208B_MW-208B-L5-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 516                  | 1           | MW-213   | MW-213_MW-213-EBT-17_20140810   | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetone_67-64-1 | 125                  | 1           | MW-213   | MW-213_MW-213-EBT-12_20130511   | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 12.5                   |
| Fluval_Acetone_67-64-1 | 19.6                 | 1           | MW-209B  | MW-209B_MW-209B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 14.9                 | 1           | MW-212   | MW-212_MW-212-LB-16_20140108    | 10/13/2012  | 10/13/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.35                 | 1           | MW-209B  | MW-209B_MW-209B-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-22    | MW-22_MW-22-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 52.7                 | 1           | MW-21    | MW-21_MW-21-EBT-18_20141016     | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 15.2                 | 1           | MW-217   | MW-217_MW-217-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 566                  | 1           | MW-21    | MW-21_MW-21-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetone_67-64-1 | 6.79                 | 1           | MW-219   | MW-219_MW-219-L5-25_20170422    | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0</         |          |                                 |             |               |                     |        |            |         |         |           |                        |

TABLE B.4  
PROJUL.S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group           | ProCUL Result (ng/L) | ProCUL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC    | CASRN   | Qualifier | Detection Limit (ng/L) |
|------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|-------------------|--------|------------|---------|---------|-----------|------------------------|
| Fluval_Acetone_67-64-1 | 10.6                 | 1           | MW-26    | MW-26_MW-26-LB-15_20150410        | 4/10/2015   | 4/10/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 12.7                 | 1           | MW-39    | MW-39_MW-39-LB-15_20150402        | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 27.1                 | 1           | MW-267   | MW-267_MW-267-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-62    | MW-62_MW-62-LB-16_20121022        | 10/22/2012  | 10/22/2012    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 16.9                 | 1           | MW-265   | MW-265_MW-265-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 13.1                 | 1           | MW-269   | MW-269_MW-269-LB-25_20170422      | 4/22/2017   | 4/22/2017     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 6.86                 | 1           | MW-39    | MW-39_MW-39-LB-15_20150402        | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-26    | MW-26_MW-26-LB-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 18.2                 | 1           | MW-39    | MW-39_MW-39-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J+        | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.07                 | 1           | MW-267   | MW-267_MW-267-LB-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 9.67                 | 1           | MW-39    | MW-39_MW-39-LB-16_20104022        | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-85    | MW-85_MW-85-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 12.5                 | 1           | MW-26    | MW-26_MW-26-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.39                 | 1           | MW-64    | MW-64_MW-64-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.26                 | 1           | MW-63B   | MW-63B_MW-63B-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 18                   | 1           | MW-64    | MW-64_MW-64-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 21                   | 1           | MW-39    | MW-39_MW-39-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-88    | MW-88_MW-88-LB-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-25A   | MW-25A_MW-25A-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | UJ        | 2.5                    |
| Fluval_Acetone_67-64-1 | 2070                 | 1           | MW-62    | MW-62_MW-62-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 250                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-85    | MW-85_MW-85-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-85    | MW-85_MW-85-EBT-18_20141110       | 11/10/2014  | 11/10/2014    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | UJ        | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-260   | MW-260_MW-260-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | UJ        | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.9                  | 1           | MW-39    | MW-39_MW-39-LB-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-85    | MW-85_MW-85-EBT-12_20130510       | 5/10/2013   | 5/10/2013     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.29                 | 1           | MW-266   | MW-266_MW-266-SRIPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 5.86                 | 1           | MW-85    | MW-85_MW-85-EBT-16_20140511       | 5/11/2014   | 5/11/2014     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | B         | 2.5                    |
| Fluval_Acetone_67-64-1 | 22.3                 | 1           | MW-26    | MW-26_MW-26-LB-20_20130410        | 10/20/2013  | 10/20/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 16.5                 | 1           | MW-267   | MW-267_MW-267-LB-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 24.2                 | 1           | MW-269   | MW-269_MW-269-LB-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-257   | MW-257_MW-257-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 9.89                 | 1           | MW-26    | MW-26_MW-26-LB-19_20131021        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 10.2                 | 1           | MW-259   | MW-259_MW-259-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J+        | 2.5                    |
| Fluval_Acetone_67-64-1 | 16.9                 | 1           | MW-62    | MW-62_MW-62-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J+        | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-270   | MW-270_MW-270_20150730            | 7/30/2015   | 7/30/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-263   | MW-263_MW-263-SRIPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-85    | MW-85_MW-85-EBT-11_20130208       | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 28.8                 | 1           | MW-270   | MW-270_MW-270-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 16                   | 1           | MW-259   | MW-259_MW-259-LB-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 28.4                 | 1           | MW-271   | MW-271_MW-271-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 11.4                 | 1           | MW-88    | MW-88_MW-88-LA-22_20151005        | 10/6/2015   | 10/6/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-261   | MW-261_MW-261-LB-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-279   | MW-279_MW-279-SRIP1216_20161209   | 12/9/2016   | 12/9/2016     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-271   | MW-271_MW-271-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.39                 | 1           | MW-271   | MW-271_MW-271-LB-20_20130419      | 4/19/2013   | 4/19/2013     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 11.3                 | 1           | MW-64    | MW-64_MW-64-LB-21_20150410        | 4/10/2015   | 4/10/2015     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.02                 | 1           | MW-259   | MW-259_MW-259-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | MW-85    | MW-85_MW-85-LB-15_20120421        | 4/21/2012   | 4/21/2012     | 8260B5030B5030C50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 6.69                 | 1           | MW-39    | MW-39_MW-39-LB-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B50           |        |            |         |         |           |                        |



TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group            | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                             | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN   | Qualifier | Detection Limit (ug/L) |
|-------------------------|----------------------|-------------|------------|---------------------------------------|-------------|---------------|---------------------|--------|------------|---------|---------|-----------|------------------------|
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | MW-96      | MW-96_MW-96-LB-16_20121019            | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 8.81                 | 1           | PMW21-01   | PMW21-01_PMW21-01-L5-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 5.99                 | 1           | PMW21-01   | PMW21-01_PMW21-01-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluvial_Acetone_67-64-1 | 8.67                 | 1           | MW-97      | MW-97_MW-97-L5-25_20170419            | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 6.15                 | 1           | MW-94A     | MW-94A_MW-94A-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 127                  | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 5                      |
| Fluvial_Acetone_67-64-1 | 5.77                 | 1           | PMW101-03B | PMW101-03B_PMW101-03B-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 43.3                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluvial_Acetone_67-64-1 | 6.03                 | 1           | PMW101-06A | PMW101-06A_PMW101-06A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 206                  | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluvial_Acetone_67-64-1 | 9.33                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 19.1                 | 1           | PMW101-06B | PMW101-06B_PMW101-06B-L5-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 5.16                 | 1           | MW-97      | MW-97_MW-97-L5-17_20130407            | 4/7/2013    | 4/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 9.9                  | 1           | PMW101-02A | PMW101-02A_PMW101-02A-L5-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 7.6                  | 1           | PMW101-06B | PMW101-06B_PMW101-06B-L5-21_20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 6.11                 | 1           | PMW21-05   | PMW21-05_PMW21-05-LA-22_20151017      | 10/17/2015  | 10/17/2015    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 813                  | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluvial_Acetone_67-64-1 | 3.45                 | 1           | PMW21-02   | PMW21-02_PMW21-02-EBT-18_20141105     | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | UJ        | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-L5-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 7.9                  | 1           | PMW101-07B | PMW101-07B_PMW101-07B-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 9.1                  | 1           | PMW101-03B | PMW101-03B_PMW101-03B-L5-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 4.86                 | 1           | PMW21-03   | PMW21-03_PMW21-03-L5-17_20130411      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 10                     |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 21.5                 | 1           | MW-98      | MW-98_MW98-LB-20_20141020             | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 7.54                 | 1           | MW-98      | MW-98_MW98-L5-21_20150409             | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.57                 | 1           | PMW21-05   | PMW21-05_PMW21-05-L5-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 17                   | 1           | PMW21-01   | PMW21-01_PMW21-01-EBT-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 35.1                 | 1           | PMW21-04   | PMW21-04_PMW21-04-EBT-15_20140208     | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 8.14                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-L5-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 6.91                 | 1           | MW-94A     | MW-94A_MW-94A-L5-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 9.83                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 671                  | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluvial_Acetone_67-64-1 | 323                  | 1           | PMW101-02B | PMW101-02B_PMW101-02B-L5-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 6.49                 | 1           | MW-98      | MW-98_MW98-LA-22_20151008             | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 2.5                  | 0           | PMW21-03   | PMW21-03_PMW21-03-L5-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acetone_67-64-1 | 12.1                 | 1           | PMW21-04   | PMW21-04_PMW21-04-EBT-16_20140507     | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluvial_Acet            |                      |             |            |                                       |             |               |                     |        |            |         |         |           |                        |

TABLE B.4  
PROCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group           | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC    | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|---------|---------|-----------|------------------------|
| Fluval_Acetone_67-64-1 | 7.2                  | 1           | DR1-5A   | DR1-5A_DR1-5A-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 5.07                 | 1           | DR2-1    | DR2-1_DR2-1-LS-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 22.1                 | 1           | DR2-3    | DR2-3_DR2-3-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 9.9                  | 1           | DR2-1    | DR2-1_DR2-1-LS-21_20150410        | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 23.9                 | 1           | DR2-1    | DR2-1_DR2-1-LS-19_20140424        | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | B         | 2.5                    |
| Fluval_Acetone_67-64-1 | 728                  | 1           | W101-04B | W101-04B_W101-04B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 2.5                    |
| Fluval_Acetone_67-64-1 | 24                   | 1           | DR2-1    | DR2-1_DR2-1-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 25.6                 | 1           | DR1-5A   | DR1-5A_DR1-5A-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR1-8    | DR1-8_DR1-8-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 1350                 | 1           | W101-02C | W101-02C_W101-02C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 62.5                   |
| Fluval_Acetone_67-64-1 | 787                  | 1           | W101-02C | W101-02C_W101-02C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 12.5                   |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR1-1    | DR1-1_DR1-1-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | W101-02B | W101-02B_W101-02B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 75                   | 1           | DR1-6A   | DR1-6A_DR1-6A-EBT-12_20130512     | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 25                     |
| Fluval_Acetone_67-64-1 | 846                  | 1           | W101-02C | W101-02C_W101-02C-EBT-18_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 50                     |
| Fluval_Acetone_67-64-1 | 3.16                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-15_20140209       | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR2-5    | DR2-5_DR2-5-LS-15_20120420        | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 12.5                 | 0           | DR1-5A   | DR1-5A_DR1-5A-LS-23_20160424      | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 12.5                   |
| Fluval_Acetone_67-64-1 | 17.7                 | 1           | DR2-1    | DR2-1_DR2-1-LA-22_20151007        | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 3.43                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR1-6    | DR1-6_DR1-6-LB-16_20121020        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 751                  | 1           | W101-04B | W101-04B_W101-04B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 50                     |
| Fluval_Acetone_67-64-1 | 13.4                 | 1           | DR2-3    | DR2-3_DR2-3-LS-23_20160421        | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 17.1                 | 1           | DR2-6    | DR2-6_DR2-6-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR1-6    | DR1-6_DR1-6-LS-23_20160424        | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 31.2                 | 1           | W101-02B | W101-02B_W101-02B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 46.9                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-17_20140807       | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 12.5                   |
| Fluval_Acetone_67-64-1 | 17.5                 | 0           | DR1-6    | DR1-6_DR1-6-LS-15_20120420        | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 47.2                 | 1           | W101-02B | W101-02B_W101-02B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 452                  | 1           | W101-04B | W101-04B_W101-04B-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 50                     |
| Fluval_Acetone_67-64-1 | 16.4                 | 1           | DR2-6    | DR2-6_DR2-6-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 31                   | 1           | W101-02B | W101-02B_W101-02B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 4.86                 | 1           | DR2-1    | DR2-1_DR2-1-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 23.4                 | 1           | DR1-6    | DR1-6_DR1-6-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR1-1    | DR1-1_DR1-1-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.82                 | 1           | DR1-1A   | DR1-1A_DR1-1A-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 30.1                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | W101-02B | W101-02B_W101-02B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 8.98                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-14_20131109       | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | JB        | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | W101-02C | W101-02C_W101-02C-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 6.12                 | 1           | W101-02C | W101-02C_W101-02C-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2170                 | 1           | DR2-5    | DR2-5_DR2-5-LS-25_20170422        | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 128                    |
| Fluval_Acetone_67-64-1 | 28.3                 | 1           | DR2-1    | DR2-1_DR2-1-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 11.5                 | 1           | DR1-1A   | DR1-1A_DR1-1A-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 547                  | 1           | W101-02C | W101-02C_W101-02C-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 2.5                  | 0           | DR2-2    | DR2-2_DR2-2-LS-15_20120420        | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | U         | 2.5                    |
| Fluval_Acetone_67-64-1 | 7.7                  | 1           | DR1-6    | DR1-6_DR1-6-LS-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone | 67-64-1 | J         | 2.5                    |
| Fluval_Acetone_67-64-1 | 135                  | 1           | W101-02C | W101-02C_W101-02C-EBT-11_20130208 |             |               |                      |        |            |         |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                        | ProUCL Result (µg/L) | ProUCL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                 | CASRN   | Qualifier | Detection Limit (µg/L) |
|-------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|----------------------|---------|-----------|------------------------|
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | IW21-04A  | IW21-04A_IW21-04A-EBT-13_20130819   | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | IW21-04B  | IW21-04B_IW21-04B-EBT-16_20140512   | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW21-01B  | IW21-01B_IW21-01B-EBT-17_20140804   | 8/4/2014    | 8/4/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101T   | MW-101T_MW101T-LB-20_20140109       | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-04C | IW101-04C_MW101-04C-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW101-05B | IW101-05B_IW101-05B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | IW85-06   | IW85-06_IW85-06-EBT-14_20131106     | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101B   | MW-101B_MW101B-LB-20_20141020       | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW21-04A  | IW21-04A_IW21-04A-EBT-14_20131018   | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW21-04A  | IW21-04A_IW21-04A-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | IW101-05C | IW101-05C_MW101-05C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 1                    | 0           | MW-100B   | MW-100B_MW100B-LB-17_20140411       | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1                      |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101T   | MW-101T_MW101T-LS-21_20150408       | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.5                  | 0           | IW21-03B  | IW21-03B_IW21-03B-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 12.5                 | 0           | IW101-05C | IW101-05C_MW101-05C-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 12.5                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW82-08   | IW82-08_IW82-08-EBT-12_20130509     | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW21-03A  | IW21-03A_IW21-03A-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW82-08   | IW82-08_IW82-08-EBT-18_20141110     | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 6.25                 | 0           | IW85-05   | IW85-05_IW85-05-EBT-12_20130508     | 5/8/2013    | 5/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 6.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-05C | IW101-05C_MW101-05C-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW82-08   | IW82-08_IW82-08-EBT-15_20140210     | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-03B  | IW21-03B_IW21-03B-EBT-16_20140508   | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 6.25                 | 0           | IW85-05   | IW85-05_IW85-05-EBT-13_20130814     | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 6.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW101-05B | IW101-05B_IW101-05B-EBT-12_20130817 | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-05C | IW101-05C_MW101-05C-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-02A  | IW21-02A_IW21-02A-EBT-11_20130206   | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW101-07A | IW101-07A_MW101-07A-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW101-05B | IW101-05B_IW101-05B-EBT-17_20141212 | 5/13/2014   | 5/13/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-03B  | IW21-03B_IW21-03B-EBT-18_20141106   | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 6.25                 | 0           | IW21-04B  | IW21-04B_IW21-04B-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 6.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101T   | MW-101T_MW101T-LS-15_20150423       | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW85-05   | IW85-05_IW85-05-EBT-17_20140509     | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-05C | IW101-05C_MW101-05C-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | IW82-02   | IW82-02_IW82-02-EBT-11_20130209     | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-100B   | MW-100B_MW100B-LS-21_20150408       | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-03B  | IW21-03B_IW21-03B-EBT-17_20140806   | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW101-05C | IW101-05C_MW101-05C-EBT-17_20141020 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-01B  | IW21-01B_IW21-01B-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 12.5                 | 0           | IW82-02   | IW82-02_IW82-02-EBT-13_20130814     | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 12.5                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-01B  | IW21-01B_IW21-01B-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW82-08   | IW82-08_IW82-08-EBT-16_20140515     | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW82-01   | IW82-01_IW82-01-EBT-11_20130209     | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-100B   | MW-100B_MW100B-LB-20_20140108       | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW21-01A  | IW21-01A_IW21-01A-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW101-07C | IW101-07C_MW101-07C-EBT-17_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-05A | IW101-05A_MW101-05A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW21-02B  | IW21-02B_IW21-02B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-07C | IW101-07C_MW101-07C-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | MW-101B   | MW-101B_IW101-01B-EBT-13_20130817   | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101T   | MW-101T_MW101T-LA-18_20131012       | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-103    | MW-103_MW103-LA-22_20151007         | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101T   | MW-101T_MW101T-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW82-03   | IW82-03_IW82-03-EBT-12_20130507     | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-07C | IW101-07C_MW101-07C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW85-06   | IW85-06_IW85-06-EBT-18_20141110     | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW101-07C | IW101-07C_MW101-07C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 28.0                 | 0           | IW82-03   | IW82-03_IW82-03-EBT-12_20130507     | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 28.0                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-101T   | MW-101T_MW101T-LS-23_20160423       | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-104    | MW-104_MW104-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW21-02B  | IW21-02B_IW21-02B-EBT-17_20140805   | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 12.5                 | 0           | IW101-04C | IW101-04C_MW101-04C-EBT-18_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 12.5                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | IW82-02   | IW82-02_IW82-02-EBT-18_20141110     | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | IW82-03   | IW82-03_IW82-03-EBT-18_20141110     | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | IW101-07C | IW101-07C_MW101-07C-EBT-17_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| PROJUL Group                          | ProCUL Result (ug/L) | ProCUL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                 | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|---------------------|--------|------------|----------------------|---------|-----------|------------------------|
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2068  | MW-2068_MW-2068-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2058  | MW-2058_MW-2058-LB-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2048  | MW-2048_MW-2048-LB-21_20150104 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204A  | MW-204A_MW-204A-LB-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.307                | 1           | MW-1998  | MW-1998_MW-1998-LB-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.307                | 1           | MW-204A  | MW-204A_MW-204A-LB-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.307                | 1           | MW-1998  | MW-1998_MW-1998-LB-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.386                | 1           | MW-1998  | MW-1998_MW-1998-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | MW-113   | MW-113_MW-113-EBT-18_20141111  | 11/11/2014  | 11/11/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | UJ        | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-113   | MW-113_MW-113-LB-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-142   | MW-142_MW-142-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | MW-113   | MW-113_MW-113-EBT-17_20140811  | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1                    | 0           | MW-143   | MW-143_MW-143-LB-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1                      |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-15_20130102 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-206A  | MW-206A_MW-206A-LB-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-206A  | MW-206A_MW-206A-LB-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-142   | MW-142_MW-142-LB-24_20161013   | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2058  | MW-2058_MW-2058-LB-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LB-19_20141008 | 4/9/2014    | 4/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.379                | 1           | MW-1998  | MW-1998_MW-1998-LB-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2058  | MW-2058_MW-2058-LB-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2058  | MW-2058_MW-2058-LB-25_20141020 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204A  | MW-204A_MW-204A-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-113   | MW-113_MW-113-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-22_20150409 | 4/9/2014    | 4/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.6                  | 1           | MW-113   | MW-113_MW-113-LB-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-198   | MW-198_MW-198-LA-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-198   | MW-198_MW-198-LB-14_20131011   | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.333                | 1           | MW-204B  | MW-204B_MW-204B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204A  | MW-204A_MW-204A-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LB-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-16_20121020   | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | MW-113   | MW-113_MW-113-EBT-15_20140210  | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2058  | MW-2058_MW-2058-LB-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 1           | MW-1998  | MW-1998_MW-1998-LB-20_20141019 | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-14_20131011   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-142   | MW-142_MW-142-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-143   | MW-143_MW-143-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204A  | MW-204A_MW-204A-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-206A  | MW-206A_MW-206A-LB-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 65.6                 | 1           | MW-113   | MW-113_MW-113-LB-16_20121022   | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2058  | MW-2058_MW-2058-LB-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-198   | MW-198_MW-198-LB-16_20121020   | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-18_20131011 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204A  | MW-204A_MW-204A-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LB-22_20150409 | 4/9/2014    | 4/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.43                 | 1           | MW-2158  | MW-2158_MW-2158-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LB-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LB-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LB-19_20140425 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | MW-213   | MW-213_MW-213-LB-23_20160424   | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-14_20131111  | 11/11/2013  | 11/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 2.75                 | 1           | MW-207B  | MW-207B_MW-207B-LB-17_20130411 | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.75                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | MW-213   | MW-213_MW-213-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-20_20141020 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-16_20121020   | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 3.45                 | 1           | MW-207B  | MW-207B_MW-207B-LB-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         |                        |

TABLE B.4  
PROJUL S.1 RAW INPUT FOR GROUNDWATER  
HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJUL Group                          | ProJUL Result (ug/L) | ProJUL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                 | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|----------------------|---------|-----------|------------------------|
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 7.65                 | 1           | MW-267   | MW-267_MW-267-SRIPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LB-24_20150720      | 10/7/2016   | 10/7/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 8.91                 | 1           | MW-88    | MW-88_MW88-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.78                 | 1           | MW-280   | MW-280_MW280-SR1216_20161209      | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-271   | MW-271_MW-271-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 5.98                 | 1           | MW-88    | MW-88_MW-88-LA-23_20160421        | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LA-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.44                 | 1           | MW-266   | MW-266_MW-266-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LA-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LA-25_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.278                | 1           | MW-266   | MW-266_MW-266-LA-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LA-22_20170420      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-279   | MW-279_MW-279-LA-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LA-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LA-21_20150410      | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-39    | MW-39_MW-39-LA-18_20131011        | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-286   | MW-286_MW-286-LA-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-270   | MW-270_MW-270-SRIPPhase1_20150515 | 5/15/2015   | 5/15/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-281   | MW-281_MW-281-LA-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-281   | MW-281_MW-281-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LA-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.961                | 1           | MW-85    | MW-85_MW-85-LB-19_20131012        | 10/15/2013  | 10/15/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LA-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 3.24                 | 1           | MW-280   | MW-280_MW-280-LA-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 11.8                 | 1           | MW-88    | MW-88_MW-88-LB-20_20141020        | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-39    | MW-39_MW39-LA-22_20151008         | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-269   | MW-269_MW-269_20150731            | 7/31/2015   | 7/31/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-265   | MW-265_MW-265-SRIPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-39    | MW-39_MW-39-LB-24_20141019        | 10/14/2019  | 10/14/2019    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 112                  | 1           | MW-85    | MW-85_MW-85-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-280   | MW-280_MW-280-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.83                 | 1           | MW-88    | MW-88_MW-88-LA-17_20140419        | 4/19/2014   | 4/19/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 3.95                 | 1           | MW-85    | MW-85_MW-85-LB-17_20140511        | 5/11/2014   | 5/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LA-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-261   | MW-261_MW-261-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-39    | MW-39_MW-39-LA-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 18.6                 | 1           | MW-267   | MW-267_MW-267-LA-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LA-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 12.7                 | 1           | MW-88    | MW-88_MW-88-LA-19_20140426        | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-279   | MW-279_MW-279-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 110                  | 1           | MW-85    | MW-85_MW-85-LA-15_20120421        | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-271   | MW-271_MW-271-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-261   | MW-261_MW-261-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 12.5                 | 1           | MW-85    | MW-85_MW-85-LB-17_20140511        | 5/11/2014   | 5/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 12.5                 | 1           | MW-85    | MW-85_MW-85-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 16.3                 | 1           | MW-267   | MW-267_MW-267-LA-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-39    | MW-39_MW39-LB-20_20141019         | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LA-25_20170422      | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 32                   | 1           | MW-85    | MW-85_MW-85-LA-23_20160421        | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-266   | MW-266_MW-266-SRIPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 4.98                 | 1           | MW-259   | MW-259_MW-259-LA-17_20130410      | 4/10/2013   | 4             |                      |        |            |                      |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJUL Group                          | ProJUL Result (ug/L) | ProJUL Flag | Location   | Sample ID                             | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                 | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|------------|---------------------------------------|-------------|---------------|---------------------|--------|------------|----------------------|---------|-----------|------------------------|
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-98      | MW-98_MW-98-L-23_20160422             | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03B | PMW101-03B_PMW101-03B-L-23_20150408   | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-03   | PMW21-03_PMW21-03-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-05   | PMW21-05_PMW21-05-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-02   | PMW21-02_PMW21-02-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-03   | MW-97_MW97-L-23_20150409              | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-18_20121019      | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03B | PMW101-03B_PMW101-03B-L-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03B | PMW101-03B_PMW101-03B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03B | PMW101-03B_PMW101-03B-LB-20_20141018  | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-04   | PMW21-04_PMW21-04-EBT-18_20141106     | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-04   | PMW21-04_PMW21-04-EBT-14_20131018     | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-02A | PMW101-02A_PMW101-02A-L_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-97      | MW-97_MW97-LA-22_20151008             | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-98      | MW-98_MW-98-L-17_20130410             | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04A | PMW101-04A_PMW101-04A-LB-20_20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-97      | MW-97_MW-97-L-17_20130410             | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-04A | PMW101-04A_PMW101-04A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-98      | MW-98_MW-98-LA-18_20131027            | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-03   | PMW21-03_PMW21-03-L-23_20160423       | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-02   | PMW21-02_PMW21-02-L-25_20170420       | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-02A | PMW101-02A_PMW101-02A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06B | PMW101-06B_PMW101-03A-L-20_20151017   | 10/17/2015  | 10/17/2015    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-04   | PMW21-04_PMW21-04_20160606            | 6/6/2016    | 6/6/2016      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-03   | PMW21-03_PMW21-03-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06A | PMW101-06A_PMW101-06A-L-25_20170420   | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06B | PMW101-06B_PMW101-03A-L-24_20151007   | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-18_20141018 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06B | PMW101-06B_PMW101-06B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-14_20131018     | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-98      | MW-98_MW-98-L-15_20120423             | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06B | PMW101-06B_PMW101-06B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03A | PMW101-03A_PMW101-03-L-19_20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-05   | PMW21-05_PMW21-05-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06A | PMW101-06A_PMW101-06A-L-21_20150408   | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | PMW101-02A | PMW101-02A_PMW101-02-EBT-11_20130207  | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-97      | MW-97_MW-97-L-25_20170419             | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-92      | MW-92_MW-92-L-19_20140424             | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06A | PMW101-06A_PMW101-06-L-19_20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1                    | 0           | PMW101-03A | PMW101-03A_PMW101-03A-L-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1                      |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-07A | PMW101-07A_PMW101-07A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03A | PMW101-03A_PMW101-03A-LB-24_20161014  | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW21-04   | PMW21-04_PMW21-04-L-25_20170420       | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | PMW21-01   | PMW21-01_PMW21-01-EBT-16_20140507     | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-07B | PMW101-07B_PMW101-07B-L-23_20160424   | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-94A     | MW-94A_MW94-LB-20_20141028            | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-03A | PMW101-03A_PMW101-03A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-06A | PMW101-06A_PMW101-06A-L-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | MW-92      | MW-92_MW92-L-21_20150410              | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluoride_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | PMW101-02A | PMW101-02A_PMW101-02-EBT-15_20140208  | 2/8/2014    | 2/8/2         |                     |        |            |                      |         |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                        | ProCUL Result (ug/L) | ProCUL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                 | CASRN   | Qualifier | Detection Limit (ug/L) |
|-------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|----------------------|---------|-----------|------------------------|
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-3     | DR1-3_DR1-3-LB-20_20141019          | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR2-2     | DR2-2_DR2-2-LS-23_20160422          | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-4     | DR1-4_DR1-4-LA-22_20131007          | 10/7/2014   | 10/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-3     | DR1-3_DR1-3-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 31.2                 | 1           | DR2-1     | DR2-1_DR2-1-LS-23_20160421          | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-LS-15_20120422        | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-17_20140806       | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | UJ        | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-16_20140508       | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-15_20140109       | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-14_20140207       | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-14_20131109       | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR2-2     | DR2-2_DR2-2-EBT-14_20131106         | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-14_20130512       | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-12_20130511       | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5A    | DR1-5A_DR1-5A-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5     | DR1-5_DR1-5-LS-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR1-5     | DR1-5_DR1-5-LS-23_20160426          | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | DR1-5     | DR2-2_DR2-2-EBT-13_20130814         | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5     | DR1-5_DR1-5-LS-15_20120422          | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR1-5     | DR1-5_DR1-5-LB-16_20121020          | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-18_20141106         | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | DR1-5     | DR1-5_DR1-5-EBT-17_20140806         | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR2-2     | DR2-2_DR2-2-EBT-15_20140210         | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-16_20140508         | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.5                  | 0           | DR1-5     | DR1-5_DR1-5-EBT-15_20140207         | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR2-5A    | DR2-5A_DR2-5A-EBT-16_20140808       | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 25                   | 0           | DR2-5     | DR2-5_DR2-5-LS-23_20160421          | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 25                     |
| Fluval_Carbon tetrachloride_56-23-5 | 69.6                 | 1           | DR2-5     | DR2-5_DR2-5-EBT-11_20130209         | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 6.25                 | 0           | WI101-02B | WI101-02B_WI101-02B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 6.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-13_20130818 | 8/17/2014   | 8/17/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | UJ        | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 78.4                 | 1           | DR2-5     | DR2-5_DR2-5-EBT-12_20130512         | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 78.4                   |
| Fluval_Carbon tetrachloride_56-23-5 | 12.5                 | 0           | DR2-5     | DR2-5_DR2-5-LS-25_20170422          | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 12.5                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 0.5                  | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | WI101-02C | WI101-02C_WI101-02C-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | UJ        | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 2.22                 | 1           | DR2-3     | DR2-3_DR2-3-LS-25_20170419          | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | UJ        | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | DR2-4     | DR2-4_DR2-4-LB-24_20161017          | 10/17/2016  | 10/17/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | WI101-02B | WI101-02B_WI101-02B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 12.5                 | 0           | WI101-02C | WI101-02C_WI101-02C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 12.5                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | UJ        | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-04C | WI101-04C_WI101-04C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| Fluval_Carbon tetrachloride_56-23-5 | 3.47                 | 1           | DR2-4     | DR2-4_DR2-4-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 3.01                 | 1           | DR2-4     | DR2-4_DR2-4-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-02A | WI101-02A_WI101-02A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 168                  | 1           | DR2-5     | DR2-5_DR2-5-LS-15_20120420          | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR2-6     | DR2-6_DR2-6-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 0.25                 | 0           | DR2-6     | DR2-6_DR2-6-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 12.5                 | 0           | WI101-04A | WI101-04A_WI101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 12.5                   |
| Fluval_Carbon tetrachloride_56-23-5 | 5                    | 0           | WI101-04C | WI101-04C_WI101-04C-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 5                      |
| Fluval_Carbon tetrachloride_56-23-5 | 1.25                 | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 1.95                 | 1           | DR2-4     | DR2-4_DR2-4-LB-24_20161013          | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 0.25                   |
| Fluval_Carbon tetrachloride_56-23-5 | 2.5                  | 0           | WI101-03A | WI101-03A_WI101-03A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     |                      |        |            |                      |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJCL Group              | ProJCL Result (µg/L) | ProJCL Flag | Location   | Sample ID                   | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC       | CASRN   | Qualifier | Detection Limit (µg/L) |
|---------------------------|----------------------|-------------|------------|-----------------------------|-------------|---------------|---------------------|--------|------------|------------|---------|-----------|------------------------|
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101T    | MW-101T-LS-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-07C | MW-101-07C-EBT-14_20131109  | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-07C | MW-101-07C-EBT-14_20140805  | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-07C | MW-101-07C-EBT-13_20130816  | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.205                | 1           | MW-104     | MW-104-MW104-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-07C | MW-101-07C-EBT-18_20141105  | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-07C | MW-101-07C-EBT-12_20130509  | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-07B | MW-101-07B-EBT-18_20141108  | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03A | MW-101-03A-EBT-11_20130206  | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02B | MW-101-02B-EBT-14_20131108  | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-01B | MW-101-01B-EBT-18_20130205  | 2/5/2013    | 2/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-103     | MW-103-MW103-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-01B | MW-101-01B-EBT-16_20140507  | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.25                 | 0           | MW-101-01B | MW-101-01B-EBT-18_20141105  | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-01B | MW-101-01B-EBT-15_20140206  | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-02A | MW-101-02A-EBT-11_20130206  | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-01B | MW-101-01B-EBT-14_20131107  | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02A | MW-101-02A-EBT-12_20130510  | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 1.42                 | 1           | MW-103     | MW-103-MW103-LB-24_20161015 | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.42                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03B | MW-101-03B-EBT-13_20130818  | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 10.4                 | 1           | MW-103     | MW-103-MW103-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-01B | MW-101-01B-EBT-12_20130510  | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02B | MW-101-02B-EBT-16_20140507  | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.625                  |
| Fluval_Chloroform-67-66-3 | 3.13                 | 0           | MW-101-04B | MW-101-04B-EBT-16_20140507  | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 3.13                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-01A | MW-101-01A-EBT-14_20131107  | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-01A | MW-101-01A-EBT-18_20141111  | 11/11/2014  | 11/11/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02A | MW-101-02A-EBT-14_20131108  | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-01A | MW-101-01A-EBT-17_20140804  | 8/4/2014    | 8/4/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02A | MW-101-02A-EBT-15_20140207  | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02A | MW-101-02A-EBT-16_20140507  | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 7.71                 | 1           | MW-104     | MW-104-MW104-LB-18_20131012 | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 7.03                 | 1           | MW-103     | MW-103-MW103-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 7.03                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-01A | MW-101-01A-EBT-16_20140507  | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-01A | MW-101-01A-EBT-15_20140206  | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02A | MW-101-02A-EBT-17_20140805  | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03A | MW-101-03A-EBT-12_20130508  | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-02A | MW-101-02A-EBT-13_20130817  | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 3.24                 | 1           | MW-104     | MW-104-MW104-LB-24_20161015 | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 3.24                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-07A | MW-101-07A-EBT-11_20130207  | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03B | MW-101-03B-EBT-13_20130818  | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.33                 | 1           | MW-101T    | MW-101T-LS-21_20150408      | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 6.25                 | 0           | MW-101-05C | MW-101-05C-EBT-18_20141108  | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 6.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-05C | MW-101-05C-EBT-17_20140808  | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03B | MW-101-03B-EBT-16_20140508  | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-03B | MW-101-03B-EBT-16_20140508  | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 2.5                  | 0           | MW-101-05C | MW-101-05C-EBT-16_20140509  | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 2.5                    |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101T    | MW-101T-LS-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-05C | MW-101-05C-EBT-15_20140208  | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03B | MW-101-03B-EBT-13_20130819  | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-03B | MW-101-03B-EBT-17_20140806  | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-07A | MW-101-07A-EBT-17_20130816  | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03B | MW-101-03B-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-05C | MW-101-05C-EBT-12_20130513  | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-04A | MW-101-04A-EBT-11_20130206  | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-101-05B | MW-101-05B-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-05B | MW-101-05B-EBT-17_20140808  | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-05B | MW-101-05B-EBT-16_20140509  | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-05B | MW-101-05B-EBT-15_20140208  | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.5                  | 0           | MW-101-04A | MW-101-04A-EBT-13_20130819  | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 2.5                    |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-07A | MW-101-07A-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-05B | MW-101-05B-EBT-14_20131110  | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-05C | MW-101-05C-EBT-14_20131110  | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-07C | MW-101-07C-EBT-11_20130207  | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-05C | MW-101-05C-EBT-11_20130207  | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-101-07B | MW-101-07B-EBT-15_20140209  | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-101-03A | MW-101-03A-EBT-13_20130819  | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Notes:  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group              | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC       | CASRN   | Qualifier | Detection Limit (µg/L) |
|---------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|----------------------|--------|------------|------------|---------|-----------|------------------------|
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-203B  | MW-203B_MW-203B-EBT-13_20130819 | 8/19/2013   | 8/26/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-205B  | MW-205B_MW-205B-LS-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204B  | MW-204B_MW-204B-LB-20_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-113   | MW-113_MW-113-EBT-18_20141111   | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-203B  | MW-203B_MW-203B-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-206A  | MW-206A_MW-206A-LS-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-143   | MW-143_MW-143-LA-18_20130112    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.96                 | 1           | MW-113   | MW-113_MW-113-EBT-16_20140513   | 5/13/2014   | 5/13/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LS-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-18_20120423  | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-198   | MW-198_MW-198-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-205B  | MW-205B_MW-205B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-22_20150104  | 1/14/2016   | 1/14/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-203B  | MW-203B_MW-203B-LS-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.313                | 0           | MW-203B  | MW-203B_MW-203B-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.313                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-198   | MW-198_MW-198-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-206A  | MW-206A_MW-206A-LB-18_20141020  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-142   | MW-142_MW-142-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-203B  | MW-203B_MW-203B-LS-15_20120420  | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 0           | MW-113   | MW-113_MW-113-EBT-17_20140811   | 8/11/2014   | 8/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LB-16_20121020  | 11/9/2012   | 11/9/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-143   | MW-143_MW-143-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.191                | 1           | MW-203B  | MW-203B_MW-203B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-200   | MW-200_MW-200-LS-19_20140425    | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-143   | MW-143_MW-143-LA-18_20130112    | 10/8/2013   | 10/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-113   | MW-113_MW-113-EBT-15_20140210   | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-143   | MW-143_MW-143-LB-18_20130111    | 10/19/2013  | 10/19/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-198   | MW-198_MW-198-LA-18_20130111    | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-205B  | MW-205B_MW-205B-LA-18_20130111  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-206A  | MW-206A_MW-206A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LS-23_20160425  | 4/25/2016   | 4/25/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-198   | MW-198_MW-198-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LS-15_20120421  | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LA-18_20130111  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-143   | MW-143_MW-143-LS-18_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-203B  | MW-203B_MW-203B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-198   | MW-198_MW-198-LA-22_20150107    | 1/7/2015    | 1/7/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-206B  | MW-206B_MW-206B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-200   | MW-200_MW-200-LS-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-200   | MW-200_MW-200-LS-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-199B  | MW-199B_MW-199B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-205B  | MW-205B_MW-205B-LS-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-200   | MW-200_MW-200-LS-21_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LS-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-142   | MW-142_MW-142-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-203B  | MW-203B_MW-203B-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.161                | 0           | MW-204B  | MW-204B_MW-204B-LA-18_20130111  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-142   | MW-142_MW-142-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-143   | MW-143_MW-143-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-206A  | MW-206A_MW-206A-LS-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-203B  | MW-203B_MW-203B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-204A  | MW-204A_MW-204A-LS-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-205B  | MW-205B_MW-205B-LS-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-200   | MW-200_MW-200-LS-21_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-197B  | MW-197B_MW-197B-LS-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-142   | MW-142_MW-142-LB-16_201210      |             |               |                      |        |            |            |         |           |                        |

TABLE B.4  
PROJUL.S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group              | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC       | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|------------|---------|-----------|------------------------|
| Fluval_Chloroform-67-66-3 | 0.242                | 1           | MW-270   | MW-270_MW-270-20150730            | 7/30/2015   | 7/30/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.26                 | 1           | MW-64    | MW-64_MW-64-L5-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.19                 | 1           | MW-50    | MW-50_MW50-LB-20_20140120         | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.76                 | 1           | MW-263   | MW-263_MW-263-SRIPhasel1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.5                  | 1           | MW-259   | MW-259_MW-259-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.2                  | 1           | MW-270   | MW-270_MW-270-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.27                 | 1           | MW-260   | MW-260_MW-260-L5-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.175                | 1           | MW-270   | MW-270_MW-270-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-62    | MW-62_MW-62-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform-67-66-3 | 1.82                 | 1           | MW-263   | MW-263_MW-263-L5-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.28                 | 1           | MW-64    | MW-64_MW-64-LB-24_20161015        | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.211                | 1           | MW-25A   | MW-25A_MW-25A-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-63A   | MW-63A_MW63A-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.18                 | 1           | MW-64    | MW-64_MW-64-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.81                 | 1           | MW-85    | MW-85_MW-85-LB-16_20121021        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.89                 | 1           | MW-259   | MW-259_MW-259-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.15                 | 1           | MW-88    | MW-88_MW88-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-39    | MW-39_MW-39-LA-18_20131011        | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 0           | MW-62    | MW-62_MW-62-EBT-16_20140510       | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.34                 | 1           | MW-261   | MW-261_MW-261-L5-15_20121042      | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-L5-21_20150409      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-271   | MW-271_MW-271-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 23.8                 | 1           | MW-85    | MW-85_MW-85-L5-15_20120421        | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-271   | MW-271_MW-271-L5-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 6.25                 | 0           | MW-62    | MW-62_MW-62-EBT-11_20130211       | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 6.25                   |
| Fluval_Chloroform-67-66-3 | 0.3                  | 0           | MW-257   | MW-257_MW-257-L5-17_20130411      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.3                    |
| Fluval_Chloroform-67-66-3 | 0.654                | 1           | MW-279   | MW-279_MW-279-SRIP1126_20161209   | 12/9/2016   | 12/9/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.1676               | 1           | MW-64    | MW-64_MW-64-L5-15_20121042        | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | B         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.54                 | 1           | MW-258   | MW-258_MW-258-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.353                | 1           | MW-271   | MW-271_MW-271-SRIPhasel1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.48                 | 1           | MW-263   | MW-263_MW-263-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.928                | 1           | MW-62    | MW-62_MW-62-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.96                 | 1           | MW-85    | MW-85_MW-85-L5-23_20160421        | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 3.08                 | 1           | MW-259   | MW-259_MW-259-L5-17_20130410      | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.77                 | 1           | MW-279   | MW-279_MW-279-L5-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.51                 | 1           | MW-259   | MW-259_MW-259-L5-21_20150409      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.25                 | 1           | MW-52    | MW-52_MW52-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.93                 | 1           | MW-259   | MW-259_MW-259-L5-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.71                 | 1           | MW-259   | MW-259_MW-259-L5-19_20141019      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.57                 | 1           | MW-85    | MW-85_MW-85-L5-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-L5-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.23                 | 1           | MW-52    | MW-52_MW52-LA-22_20151007         | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-L5-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.729                | 1           | MW-52    | MW-52_MW-52-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.02                 | 1           | MW-64    | MW-64_MW-64-L5-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-LB-18_20141019      | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.841                | 1           | MW-52    | MW-52_MW-52-LA-18_20131011        | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.9                  | 1           | MW-85    | MW-85_MW-85-LB-24_20161015        | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.05                 | 1           | MW-258   | MW-258_MW-258-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.125                | 0           | MW-261   | MW-261_MW-261-L5-15_20121042      | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 4.81                 | 1           | MW-281   | MW-281_MW-281-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.7                  | 1           | MW-88    | MW-88_MW-88-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.27                 | 1           | MW-64    | MW-64_MW-64-L5-23_20160421        | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.625                | 1           | MW-270   | MW-270_MW-270-SRIPhasel1_20150515 | 5/15/2015   | 5/15/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.199                | 1           | MW-270   | MW-270_MW-270-SRIPhasel1_20150515 | 5/15/2015   | 5/15/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.54                 | 1           | MW-263   | MW-263_MW-263-L5-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.57                 | 1           | MW-50    | MW-50_MW-50-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 4.57                 | 1           | MW-281   | MW-281_MW-281-L5-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 2.69                 | 1           | MW-259   | MW-259_MW-259-L5-15_20121042      | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.287                | 1           | MW-62    | MW-62_MW-62-EBT-14_20131111       | 11/11/2013  | 11/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.867                | 1           | MW-64    | MW-64_MW64-L5-21_20150410         | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 1.1                  | 1           | MW-260   | MW-260_MW-260-L5-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 3.12                 | 1           | MW-62    | MW-62_MW-62-EBT-18_20141019       | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform-67-66-3 | 0.829                | 1           | MW-64    | MW-64_MW-64-L5-19_20140425        | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group               | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                                | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC       | CASRN   | Qualifier | Detection Limit (ug/L) |
|----------------------------|----------------------|-------------|------------|------------------------------------------|-------------|---------------|----------------------|--------|------------|------------|---------|-----------|------------------------|
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-18, 20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-18, 20141107  | 11/17/2014  | 11/17/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-03   | PMW21-03, PMW21-03-L-15, 20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.346                | 1           | MW-97      | MW-97_MW-97-L-15, 20120423               | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.199                | 1           | MW-92      | MW-92_MW-92-L-15, 20120423               | 4/20/2016   | 4/20/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | B         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-05   | PMW21-05, PMW21-05-LA-18, 20151007       | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.422                | 1           | MW-92      | MW-92_MW92-LA-22, 20151006               | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.197                | 1           | PMW101-04B | PMW101-04B, PMW101-04B-L-25, 20170421    | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.157                | 1           | MW-92      | MW-92_MW92-L-21, 20150410                | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-14, 20131110  | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-13, 20130816  | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.242                | 1           | MW-96      | MW-96_MW96-LB-39, 20141020               | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04A | PMW101-04A, PMW101-04A-L-23, 20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-16, 20140510  | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | MW-98      | MW-98_MW-98-L-19, 20140425               | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-04   | PMW21-04, PMW21-04-EBT-15, 20140208      | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.167                | 1           | PMW21-01   | PMW21-01, PMW21-01-EBT-11, 20130205      | 2/5/2013    | 2/5/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-12, 20130513  | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-17, 20140809  | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04A | PMW101-04A, PMW101-04A-L-20, 20141018    | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-03A | PMW101-03A, PMW101-03A-L-23, 20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-13, 20130815  | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-03   | PMW21-03, PMW21-03-LA-18, 20131012       | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-11, 20130207  | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-13, 20130816  | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-15, 20140208  | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.272                | 1           | MW-97      | MW-97_MW-97-L-15, 20130410               | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.178                | 1           | PMW21-01   | PMW21-01, PMW21-01-EBT-11, 20130511      | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LA-18, 20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-L-23, 20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-05   | PMW21-05, PMW21-05-LB-20, 20141018       | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | MW-94A     | MW-94A_MW-94A-L-22, 20151004             | 10/4/2015   | 10/4/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-18, 20141108  | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04B | PMW101-04B, PMW101-04B-L-23, 20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.138                | 1           | PMW101-06B | PMW101-06B, PMW101-06B-L-23, 20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-01   | PMW21-01, PMW21-01-LB-24, 20161013       | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07B | PMW101-07B, PMW101-07B-L-24, 20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.18                 | 1           | PMW21-04   | PMW21-04, PMW21-04-LB-24, 20161013       | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-02   | PMW21-02, PMW21-02-L-23RE, 20160523      | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-05   | PMW21-05, PMW21-05-LB-24, 20161014       | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-02B | PMW101-02B, PMW101-02B-L-24, 20161014    | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-05   | PMW21-05, PMW21-05-LB-16, 20121019       | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | PMW101-02A | PMW101-02A, PMW101-02A-L-25-RE, 20170424 | 4/24/2017   | 4/24/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-05   | PMW21-05, PMW21-05-L-15, 20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-03A | PMW101-03A, PMW101-03A-L-20, 20141018    | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-16, 20140509  | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-04   | PMW21-04, PMW21-04-EBT-14, 20131108      | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-15, 20140207  | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L-25, 20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | MW-98      | MW-98_MW98-L-21, 20150409                | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-11, 20130207  | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-16, 20140509  | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | MW-98      | MW-98_MW98-LA-22, 20151004               | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-17, 20140809  | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07B | PMW101-07B, PMW101-07B-L-25, 20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-17, 20140808  | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-L-24, 20161014    | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-01   | PMW21-01, PMW21-01-L-23RE, 20160523      | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LB-24, 20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW21-03   | PMW21-03, PMW21-03-L-23, 20160423        | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-16, 20140510  | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | PMW101-07B | PMW101-07B, PMW101-07B-L-24, 20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.288                | 1           | MW-96      | MW-96_MW-96-LB-16, 20121019              | 10/19/2012  | 10/19/2012    |                      |        |            |            |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group               | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC       | CASRN   | Qualifier | Detection Limit (ug/L) |
|----------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|------------|---------|-----------|------------------------|
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02B | W101-02B_W101-02B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | DR1-6A   | DR1-6A_DR1-6A-EBT-12_20130512     | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | W101-02C | W101-02C_W101-02C-EBT-12_20140509 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | W101-04A | W101-04A_W101-04A-EBT-12_20130209 | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | W101-04A | W101-04A_W101-04A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-6    | DR1-6_DR1-6-LS-23_20160424        | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | DR1-6A   | DR1-6A_DR1-6A-EBT-13_20130816     | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-5A   | DR1-5A_DR1-5A-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-6A   | DR1-6A_DR1-6A-EBT-14_20131109     | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | W101-02A | W101-02A_W101-02A-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02C | W101-02C_W101-02C-EBT-12_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 6.25                 | 0           | DR1-6A   | DR1-6A_DR1-6A-EBT-15_20140209     | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 6.25                 | 0           | W101-03C | W101-03C_W101-03C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 6.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LB-24_20161016        | 10/16/2016  | 10/16/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | W101-02A | W101-02A_W101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | DR1-6A   | DR1-6A_DR1-6A-EBT-16_20140508     | 4/8/2014    | 4/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-5A   | DR1-5A_DR1-5A-LS-15_20120422      | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-4    | DR1-4_DR1-4-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02B | W101-02B_W101-02B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | DR1-4    | DR1-4_DR1-4-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.686                | 1           | DR2-2    | DR2-2_DR2-2-LS-15_20120420        | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 2.5                  | 0           | W101-04A | W101-04A_W101-04A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 2.5                    |
| Fluval_Chloroform, 67-66-3 | 3.13                 | 0           | W101-04A | W101-04A_W101-04A-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 3.13                   |
| Fluval_Chloroform, 67-66-3 | 2.5                  | 0           | W101-02C | W101-02C_W101-02C-EBT-11_20130208 | 1/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 2.5                    |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LS-23_20160423        | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-6    | DR1-6_DR1-6-EBT-16_20140508       | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | W101-02C | W101-02C_W101-02C-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02B | W101-02B_W101-02B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | DR1-6    | DR1-6_DR1-6-EBT-17_20140807       | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02B | W101-02B_W101-02B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-6    | DR1-6_DR1-6-EBT-14_20131109       | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-4    | DR1-4_DR1-4-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LS-25_20170421        | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 3.13                 | 0           | W101-03C | W101-03C_W101-03C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 3.13                   |
| Fluval_Chloroform, 67-66-3 | 1.25                 | 0           | W101-02C | W101-02C_W101-02C-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-6    | DR1-6_DR1-6-LB-16_20121020        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02B | W101-02B_W101-02B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LS-19_20140426        | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.145                | 1           | DR1-6    | DR1-6_DR1-6-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-03C | W101-03C_W101-03C-EBT-18_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | DR1-6    | DR1-6_DR1-6-EBT-16_20140508       | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-02B | W101-02B_W101-02B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-6    | DR1-6_DR1-6-LS-15_20120422        | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LS-21_20150408        | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-04A | W101-04A_W101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 2.5                  | 0           | W101-04A | W101-04A_W101-04A-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 2.5                    |
| Fluval_Chloroform, 67-66-3 | 6.25                 | 0           | W101-04A | W101-04A_W101-04A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 6.25                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LS-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.145                | 1           | DR1-6    | DR1-6_DR1-6-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-3    | DR1-3_DR1-3-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-7    | DR1-7_DR1-7-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR2-2    | DR2-2_DR2-2-EBT-15_20140210       | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.915                | 0           | DR2-4    | DR2-4_DR2-4-LS-21_20141101        | 4/11/2014   | 4/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.128                | 1           | DR1-7    | DR1-7_DR1-7-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.625                | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20141107     | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.625                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR2-6    | DR2-6_DR2-6-LS-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.76                 | 0           | DR2-6    | DR2-6_DR2-6-LS-19_20140508        | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.76                   |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | W101-03A | W101-03A_W101-03A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.142                | 1           | DR1-7    | DR1-7_DR1-7-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-4    | DR1-4_DR1-4-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.148                | 1           | DR1-2    | DR1-2_DR1-2-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-17_20140806     | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-8    | DR1-8_DR1-8-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 1.44                 | 1           | DR2-6    | DR2-6_DR2-6-LS-23_20160422        | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.44                   |
| Fluval_Chloroform, 67-66-3 | 0.444                | 1           | DR2-6    | DR2-6_DR2-6-LS-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| Fluval_Chloroform, 67-66-3 | 0.125                | 0           | DR1-8    | DR1-8_DR                          |             |               |                      |        |            |            |         |           |                        |

TABLE B.4  
PROJECT 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                           | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                           | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN    | Qualifier | Detection Limit (ug/L) |
|----------------------------------------|----------------------|-------------|----------|-------------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|----------|-----------|------------------------|
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 28.1                 | 1           | W121-02A | W121-02A, W121-02A-EBT-17, 20140805 | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.48                 | 1           | W101-05B | W101-05B, W101-05B-EBT-13, 20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 4.51                 | 1           | W101-05B | W101-05B, W101-05B-EBT-12, 20130613 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 24.4                 | 1           | W101-05C | W101-05C, W101-05C-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.43                 | 1           | MW-103   | MW-103, MW103-LA-22, 20151007       | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 12.5                 | 0           | W101-04C | W101-04C, W101-04C-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 12.5                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.59                 | 1           | W101-05B | W101-05B, W101-05B-EBT-16, 20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.373                | 1           | MW-103   | MW-103, MW-103-LA-18, 20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 5.14                 | 1           | W101-05B | W101-05B, W101-05B-EBT-18, 20141101 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 7.7                  | 1           | W121-02A | W121-02A, W121-02A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 92.1                 | 1           | W102-08  | W102-08, W102-08-EBT-13, 20130815   | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 64.6                 | 1           | W121-03B | W121-03B, W121-03B-EBT-18, 20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 12.5                 | 0           | W101-05C | W101-05C, W101-05C-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 12.5                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 78.6                 | 1           | W121-04A | W121-04A, W121-04A-EBT-12, 20130511 | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 56.5                 | 1           | W121-04A | W121-04A, W121-04A-EBT-15, 20140205 | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 6.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.5                  | 0           | W102-01  | W102-01, W102-01-EBT-16, 20140512   | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.395                | 1           | MW-101T  | MW-101T, MW-101T-L5-15, 20140243    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 117                  | 1           | W102-08  | W102-08, W102-08-EBT-12, 20130509   | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.98                 | 1           | MW-101B  | MW-101B, MW101B-L5-21, 20150408     | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.921                | 1           | MW-104   | MW-104, MW-104-L5-25, 20150408      | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 107                  | 1           | W121-03B | W121-03B, W121-03B-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 174                  | 1           | W121-03A | W121-03A, W121-03A-EBT-12, 20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 21.6                 | 1           | W102-01  | W102-01, W102-01-EBT-12, 20130511   | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 16.8                 | 1           | W101-05B | W101-05B, W101-05B-EBT-13, 20130817 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-101B  | MW-101B, MW-101B-LB-16, 20120119    | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 25.5                 | 1           | MW-101T  | MW-101T, MW-101T-L5-17, 20130411    | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1                      |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 13.8                 | 1           | W101-05A | W101-05A, W101-05A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 10.2                 | 1           | MW-101B  | MW-101B, MW-101B-L5-19, 20140407    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 182                  | 1           | W121-03A | W121-03A, W121-03A-EBT-11, 20130206 | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 15.6                 | 1           | W101-07B | W101-07B, W101-07B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 119                  | 1           | W121-03B | W121-03B, W121-03B-EBT-12, 20130511 | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.25                 | 0           | W101-05B | W101-05B, W101-05B-EBT-16, 20140512 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 8.69                 | 1           | W101-05A | W101-05A, W101-05A-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 23.4                 | 1           | W121-02B | W121-02B, W121-02B-EBT-18, 20141105 | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 52.9                 | 1           | W101-07B | W101-07B, W101-07B-EBT-13, 20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 12.5                 | 0           | W102-01  | W102-01, W102-01-EBT-17, 20140812   | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 15.7                 | 1           | W101-05A | W101-05A, W101-05A-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 134                  | 1           | W121-03A | W121-03A, W121-03A-EBT-16, 20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 20.5                 | 1           | W101-07B | W101-07B, W101-07B-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 12.5                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 3.66                 | 1           | W101-05B | W101-05B, W101-05B-EBT-15, 20140205 | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 6.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 15.3                 | 1           | MW-100B  | MW-100B, MW-100B-LB-16, 20120119    | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 3.98                 | 1           | MW-101T  | MW-101T, MW-101T-L5-19, 20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 9.71                 | 1           | W101-05A | W101-05A, W101-05A-EBT-13, 20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 211                  | 1           | W121-03A | W121-03A, W121-03A-EBT-15, 20140206 | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 30.5                 | 1           | W102-07  | W102-07, W102-07-EBT-12, 20130509   | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 8.94                 | 1           | W101-05C | W101-05C, W101-05C-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 217                  | 1           | W121-03A | W121-03A, W121-03A-EBT-13, 20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 6.71                 | 1           | W101-05B | W101-05B, W101-05B-EBT-16, 20140512 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 236                  | 1           | W121-03A | W121-03A, W121-03A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 12.5                 | 0           | W101-05B | W101-05B, W101-05B-EBT-14, 20131107 | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 12.5                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 90.2                 | 1           | W121-03A | W121-03A, W121-03A-EBT-18, 20141105 | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 34.8                 | 1           | W101-07B | W101-07B, W101-07B-EBT-15, 20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 16.7                 | 1           | W101-07B | W101-07B, W101-07B-EBT-17, 20140407 | 4/7/2014    | 4/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 58.9                 | 1           | W101-07B | W101-07B, W101-07B-EBT-14, 20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 137                  | 1           | W121-03A | W121-03A, W121-03A-EBT-17, 20140806 | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 90                   | 1           | W121-03B | W121-03B, W121-03B-EBT-16, 20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 31                   | 1           | MW-101B  | MW-101B, MW-101B-LB-16, 20120119    | 10/12/2012  | 10/12/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.5                  | 0           | W102-01  | W102-01, W102-01-EBT-15, 20140210   | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 94.1                 | 1           | W121-03B | W121-03B, W121-03B-EBT-15, 20140206 | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         |                        |

TABLE B.4  
PROJECT 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                              | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN    | Qualifier | Detection Limit (µg/L) |
|-------------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|----------|-----------|------------------------|
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 6.12                 | 1           | MW-1978  | MW-1978_MW-1978-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.93                 | 1           | MW-1978  | MW-1978_MW-1978-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-L-21_20150409   | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.33                 | 1           | MW-1998  | MW-1998_MW-1998-LA-22_20151008  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 2.88                 | 1           | MW-206A  | MW-206A_MW-206A-L-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 11.5                 | 1           | MW-205B  | MW-205B_MW-205B-L-21_20150409   | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.753                | 0           | MW-200   | MW-200_MW-200-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 5.3                  | 1           | MW-205B  | MW-205B_MW-205B-L-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.15                 | 1           | MW-1978  | MW-1978_MW-1978-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 9.92                 | 1           | MW-205B  | MW-205B_MW-205B-L-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 6.18                 | 1           | MW-206A  | MW-206A_MW-206A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.83                 | 1           | MW-1978  | MW-1978_MW-1978-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.63                 | 1           | MW-200   | MW-200_MW-200-L-21_20150409     | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 2.98                 | 1           | MW-200   | MW-200_MW-200-L-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-198   | MW-198_MW-198-LB-20_20141010    | 10/10/2014  | 10/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.96                 | 1           | MW-1978  | MW-1978_MW-1978-EBT-12_20130511 | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.396                | 1           | MW-1998  | MW-1998_MW-1998-L-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 6.75                 | 1           | MW-1978  | MW-1978_MW-1978-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.8                  | 1           | MW-200   | MW-200_MW-200-LA-18_20131011    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 8.41                 | 1           | MW-1978  | MW-1978_MW-1978-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 12                   | 1           | MW-205B  | MW-205B_MW-205B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 92.1                 | 1           | MW-113   | MW-113_MW-113-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.528                | 1           | MW-204A  | MW-204A_MW-204A-LA-18_20131011  | 9/10/2013   | 9/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 2.55                 | 1           | MW-206B  | MW-206B_MW-206B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-198   | MW-198_MW-198-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 26.1                 | 1           | MW-203B  | MW-203B_MW-203B-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.937                | 0           | MW-204B  | MW-204B_MW-204B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-143   | MW-143_MW-143-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 3.45                 | 1           | MW-206A  | MW-206A_MW-206A-L-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.998                | 1           | MW-204B  | MW-204B_MW-204B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-142   | MW-142_MW-142-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 4.67                 | 1           | MW-206A  | MW-206A_MW-206A-L-21_20150409   | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 119                  | 1           | MW-113   | MW-113_MW-113-EBT-17_20140811   | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 4.61                 | 1           | MW-205B  | MW-205B_MW-205B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-143   | MW-143_MW-143-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 12.7                 | 1           | MW-203B  | MW-203B_MW-203B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.59                 | 1           | MW-203B  | MW-203B_MW-203B-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.08                 | 1           | MW-204B  | MW-204B_MW-204B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.937                | 1           | MW-204B  | MW-204B_MW-204B-L-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 2.45                 | 1           | MW-206B  | MW-206B_MW-206B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.69                 | 1           | MW-204B  | MW-204B_MW-204B-LA-18_20131011  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 11.8                 | 1           | MW-205B  | MW-205B_MW-205B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1.68                 | 1           | MW-206B  | MW-206B_MW-206B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.458                | 0           | MW-204B  | MW-204B_MW-204B-LB-20_20141020  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 5.29                 | 1           | MW-205B  | MW-205B_MW-205B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-143   | MW-143_MW-143-L-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 28.6                 | 1           | MW-113   | MW-113_MW-113-LB-16_20121022    | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 11.8                 | 1           | MW-204B  | MW-204B_MW-204B-LB-20_20141020  | 9/10/2013   | 9/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-143   | MW-143_MW-143-LB-16_20121019    | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.278                | 1           | MW-204B  | MW-204B_MW-204B-L-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 77.9                 | 1           | MW-113   | MW-113_MW-113-L-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 3.41                 | 1           | MW-204B  | MW-204B_MW-204B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 1                    | 0           | MW-143   | MW-143_MW-143-L-17_20130411     | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 1                      |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-142   | MW-142_MW-142-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 47.7                 | 1           | MW-203B  | MW-203B_MW-203B-L-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 133                  | 1           | MW-113   | MW-113_MW-113-EBT-14_20141020   | 11/11/2014  | 11/11/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 25.4                 | 1           | MW-203B  | MW-203B_MW-203B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 5.63                 | 1           | MW-204A  | MW-204A_MW-204A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 0.339                | 1           | MW-204B  | MW-204B_MW-204B-L-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluoride_cis-1,2-Dichloroethene, 156-59-2 | 10.5                 |             |          |                                 |             |               |                     |        |            |                        |          |           |                        |



TABLE B.4  
PROJECT 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                            | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN    | Qualifier | Detection Limit (µg/L) |
|-----------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|----------|-----------|------------------------|
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.89                 | 1           | MW-2068  | MW-2068_MW-2068-LS-19_20140425    | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.501                | 1           | MW-2068  | MW-2068_MW-2068-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.771                | 1           | MW-217   | MW-217_MW-217-L5-25_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.01                 | 1           | MW-2068  | MW-2068_MW-2068-LS-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-216   | MW-216_MW-216A-LA-18_20130111     | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.519                | 1           | MW-217   | MW-217_MW-217-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-2068  | MW-2068_MW-2068-L5-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.13                 | 1           | MW-2068  | MW-2068_MW-2068-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.347                | 1           | MW-212   | MW-212_MW-212-EBT-17_20140810     | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.36                 | 1           | MW-2068  | MW-2068_MW-2068-LS-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-271   | MW-271_MW-271-L5-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.436                | 1           | MW-64    | MW-64_MW-64-L5-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-261   | MW-261_MW-261-L5-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.345                | 1           | MW-88    | MW-88_MW-88-L5-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-261   | MW-261_MW-261-L5-25_20140501      | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.51                 | 1           | MW-52    | MW-52_MW-52-LB-24_20161015        | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-L5-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.22                 | 1           | MW-258   | MW-258_MW-258-L5-17_20130411      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-267   | MW-267_MW-267-SRIPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-63B   | MW-63B_MW-63B-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.52                 | 1           | MW-263   | MW-263_MW-263-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.475                | 1           | MW-64    | MW-64_MW-64-L5-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 28.5                 | 1           | MW-85    | MW-85_MW-85-L5-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-270   | MW-270_MW-270-L5-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.406                | 1           | MW-267   | MW-267_MW-267-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.17                 | 1           | MW-88    | MW-88_MW-88-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-259   | MW-259_MW-259-L5-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.393                | 1           | MW-267   | MW-267_MW-267-LB-20_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.574                | 1           | MW-52    | MW-52_MW-52-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 3                    | 1           | MW-263   | MW-263_MW-263-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.4                  | 1           | MW-88    | MW-88_MW-88-LA-22_20151006        | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.344                | 1           | MW-63B   | MW-63B_MW-63B-LA-22_20141017      | 10/17/2014  | 10/17/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.277                | 1           | MW-259   | MW-259_MW-259-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.34                 | 1           | MW-63B   | MW-63B_MW-63B-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-261   | MW-261_MW-261-L5-21_20150409      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-271   | MW-271_MW-271-SRIPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.431                | 1           | MW-67    | MW-67_MW-67-L5-25_20170421        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.273                | 1           | MW-63B   | MW-63B_MW-63B-LB-20_20141021      | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-266   | MW-266_MW-266-SRIPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.89                 | 1           | MW-258   | MW-258_MW-258-L5-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LB-20_20141021      | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.471                | 1           | MW-267   | MW-267_MW-267-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.375                | 1           | MW-62    | MW-62_MW-62-EBT-13_20130820       | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.57                 | 1           | MW-88    | MW-88_MW-88-L5-19_20140426        | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-265   | MW-265_MW-265-L5-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.4                  | 1           | MW-263   | MW-263_MW-263-SRIPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 85.1                 | 1           | MW-270   | MW-270_MW-270-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.431                | 1           | MW-64    | MW-64_MW-64-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 25.1                 | 1           | MW-62    | MW-62_MW-62-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 16.3                 | 1           | MW-270   | MW-270_MW-270-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.436                | 1           | MW-258   | MW-258_MW-258-LA-16_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.29                 | 1           | MW-269   | MW-269_MW-269_20150731            | 7/31/2015   | 7/31/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.97                 | 1           | MW-269   | MW-269_MW-269-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.7                  | 1           | MW-88    | MW-88_MW-88-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 99.5                 | 1           | MW-62    | MW-62_MW-62-EBT-13_20130820       | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-259   | MW-259_MW-259-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.404                | 1           | MW-265   | MW-265_MW-265-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 15.8                 | 1           | MW-270   | MW-270_MW-270-L5-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.94                 | 1           | MW-258   | MW-258_MW-258-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                           | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                             | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                   | CASRN    | Qualifier | Detection Limit (ug/L) |
|----------------------------------------|----------------------|-------------|------------|---------------------------------------|-------------|---------------|----------------------|--------|------------|------------------------|----------|-----------|------------------------|
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 72                   | 1           | PMW21-04   | PMW21-04_PMW21-04-EBT-18_20141106     | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 60.8                 | 1           | PMW21-04   | PMW21-04_PMW21-04-EBT-17_20140806     | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 10.6                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 8.01                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 11.4                 | 1           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.541                | 1           | MW-98      | MW-98_MW-98-LA-18_20131011            | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 18.3                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-LB-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 16.5                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-LB-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.642                | 1           | MW-98      | MW-98_MW98-LA-22_20151008             | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | MW-97      | MW-97_MW-97-LA-17_20130410            | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 34.5                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 16.9                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.358                | 1           | MW-98      | MW-98_MW-98-LA-22_20150423            | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 7.35                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-LB-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 40.5                 | 1           | MW-92      | MW-92_MW-92-LB-20_20131018            | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.637                | 1           | PMW101-03B | PMW101-03B_PMW101-03B-LB-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1                      |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 19                   | 1           | PMW101-03B | PMW101-03B_PMW101-03B-LB-20_20141018  | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 32.9                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 25.3                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.58                 | 1           | MW-98      | MW-98_MW-98-LA-19_20140421            | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.849                | 1           | MW-98      | MW-98_MW98-LA-21_20150409             | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.5                  | 1           | MW-98      | MW-98_MW-98-LB-16_20121020            | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.63                 | 1           | PMW101-03A | PMW101-03A_PMW101-03A-LB-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 29.5                 | 1           | PMW101-03A | PMW101-03A_PMW101-03A-LB-21_20161018  | 10/18/2016  | 10/18/2016    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 5.56                 | 1           | MW-98      | MW-98_MW-98-LA-25_20170420            | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.977                | 1           | PMW21-05   | PMW21-05_PMW21-05-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 20.5                 | 1           | PMW101-03A | PMW101-03A_PMW101-03A-LB-25_20150408  | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.58                 | 1           | PMW101-03A | PMW101-03A_PMW101-03A-LB-22_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 9.55                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 28                   | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 30.5                 | 1           | MW-92      | MW-92_MW92-LB-20_20140210             | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.25                 | 1           | PMW101-03B | PMW101-03B_PMW101-03B-LB-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1                      |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 31.5                 | 1           | PMW101-03B | PMW101-03B_PMW101-03B-LB-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 19.4                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.03                 | 1           | PMW101-04A | PMW101-04A_PMW101-04A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.75                 | 1           | PMW101-03A | PMW101-03A_PMW101-03A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 11.9                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 22.2                 | 1           | MW-92      | MW-92_MW92-LA-22_20151006             | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.515                | 1           | PMW21-05   | PMW21-05_PMW21-05-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 4.09                 | 1           | PMW101-02A | PMW101-02A_PMW101-02A-LB-25_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 2.5                    |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.21                 | 1           | PMW101-03A | PMW101-03A_PMW101-03A-LB-22_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 5.66                 | 1           | PMW21-02   | PMW21-02_PMW21-02-EBT-14_20131108     | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.602                | 1           | PMW101-06B | PMW101-06B_PMW101-06B-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 44.5                 | 1           | PMW21-04   | PMW21-04_PMW21-04-EBT-13_20130816     | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.268                | 1           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.41                 | 1           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.63                 | 1           | MW-94A     | MW-94A_MW-94A-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 5.97                 | 1           | PMW21-02   | PMW21-02_PMW21-02-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.91                 | 1           | MW-94A     | MW-94A_MW-94A-LB-23_20160423          | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 75.4                 | 1           | PMW21-02   | PMW21-02_PMW21-02-LB-23RE_20160523    | 5/23/2016   | 5/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 77.6                 | 1           | PMW21-04   | PMW21-04_PMW21-04-EBT-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 1.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 3.45                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.46                 | 1           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 5.01                 | 1           | PMW101-04B | PMW101-04B_PMW101-04B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 2.37                 | 1           | PMW101-06B | PMW101-06B_PMW101-06B-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 66.1                 | 1           | MW-92      | MW-92_MW-92-LB-15_20120423            | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.68                 | 1           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | PMW21-05   | PMW21-05_PMW21-05-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| Fluor_cis-1,2-Dichloroethene, 156-59-2 | 1.31                 | 1           | MW-94A     | MW-94A_MW94A-LB-20_20141020           | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 |           | 0.25                   |
| Flu                                    |                      |             |            |                                       |             |               |                      |        |            |                        |          |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                            | ProCUL Result (µg/L) | ProCUL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN    | Qualifier | Detection Limit (µg/L) |
|-----------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|----------|-----------|------------------------|
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 5.9                  | 1           | W101-03A | W101-03A_W101-03A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 5.86                 | 1           | W101-03A | W101-03A_W101-03A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 5.54                 | 1           | DR2-2    | DR2-2_DR2-2-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 6.42                 | 1           | DR2-6    | DR2-6_DR2-6-LS-19_20140424        | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 15.5                 | 1           | W101-03B | W101-03B_W101-03B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.26                 | 1           | DR1-5A   | DR1-5A_DR1-5A-LS-15_20120422      | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 17                   | 1           | DR2-6    | DR2-6_DR2-6-LS-21_20150411        | 4/11/2015   | 4/11/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.275                | 1           | DR1-2    | DR1-2_DR1-2-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 48.8                 | 1           | DR2-6    | DR2-6_DR2-6-LB-20_20141023        | 10/23/2014  | 10/23/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 9.74                 | 1           | DR2-2    | DR2-2_DR2-2-LS-23_20160422        | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 5.15                 | 1           | W101-04A | W101-04A_W101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 37.2                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20141017     | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.484                | 1           | DR1-7    | DR1-7_DR1-7-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 8.82                 | 1           | W101-03B | W101-03B_W101-03B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 44.9                 | 1           | W101-04C | W101-04C_W101-04C-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.428                | 1           | DR2-4    | DR2-4_DR2-4-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 14.3                 | 1           | DR1-6A   | DR1-6A_DR1-6A-EBT-18_20141107     | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 37.4                 | 1           | W101-03C | W101-03C_W101-03C-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 6.94                 | 1           | W101-04A | W101-04A_W101-04A-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 55.6                 | 1           | W101-03C | W101-03C_W101-03C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 12.5                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.73                 | 1           | W101-03B | W101-03B_W101-03B-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 12                   | 1           | W101-02B | W101-02B_W101-02B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.281                | 1           | DR1-6    | DR1-6_DR1-6-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 11                   | 1           | DR1-3    | DR1-3_DR1-3-LS-19_20140426        | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 62.9                 | 1           | W101-02C | W101-02C_W101-02C-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 13.6                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-13_20130816       | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.02                 | 1           | DR1-6    | DR1-6_DR1-6-LS-15_20120422        | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 5.61                 | 1           | W101-02B | W101-02B_W101-02B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.865                | 1           | DR1-6    | DR1-6_DR1-6-LB-16_20121020        | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | DR1-3    | DR1-3_DR1-3-LS-23_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.71                 | 1           | DR1-6    | DR1-6_DR1-6-LS-23_20160424        | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 25.2                 | 1           | W101-04C | W101-04C_W101-04C-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 12.1                 | 1           | DR1-5    | DR1-5_DR1-5-EBT-16_20140508       | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | DR1-6    | DR1-6_DR1-6-LS-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.523                | 1           | DR1-4    | DR1-4_DR1-4-LB-18_20150114        | 10/12/2014  | 10/12/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 5.62                 | 1           | W101-02B | W101-02B_W101-02B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 3.64                 | 1           | DR1-3    | DR1-3_DR1-3-LS-17_20130411        | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1                      |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 31.7                 | 1           | W101-02C | W101-02C_W101-02C-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 2.24                 | 1           | W101-02B | W101-02B_W101-02B-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 34.1                 | 1           | DR1-6A   | DR1-6A_DR1-6A-EBT-11_20130206     | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.731                | 1           | DR1-1    | DR1-1_DR1-1-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 91.6                 | 1           | W101-03C | W101-03C_W101-03C-EBT-16_20131028 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 59.4                 | 1           | W101-02C | W101-02C_W101-02C-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 16.6                 | 1           | DR1-5    | DR1-5_DR1-5-EBT-15_20140207       | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LS-19_20140424        | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.734                | 1           | DR1-1    | DR1-1_DR1-1-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 30.3                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-16_20140508       | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 56.9                 | 1           | W101-02C | W101-02C_W101-02C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.36                 | 1           | DR2-3    | DR2-3_DR2-3-LS-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 12                   | 1           | W101-03C | W101-03C_W101-03C-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 5                      |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 11.4                 | 1           | DR2-3    | DR2-3_DR2-3-LS-23_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.55                 | 1           | DR2-3    | DR2-3_DR2-3-LS-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 91.8                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-17_20140807       | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 0.553                | 1           | DR1-6    | DR1-6_DR1-6-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 1.46                 | 1           | DR1-3    | DR1-3_DR1-3-LS-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 18.6                 | 1           | W101-02B | W101-02B_W101-02B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 74.8                 | 1           | W101-02C | W101-02C_W101-02C-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 13.5                 | 1           | DR1-3    | DR1-3_DR1-3-LS-21_20150408        | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| Fluval_cis-1,2-Dichloroethene, 156-59-2 | 59.4                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-  |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJCL Group                    | ProJCL Result (ug/L) | ProJCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                             | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|----------------------------------|---------|-----------|------------------------|
| Fluval_MEK (2-Butanone)-78-93-3 | 399                  | 1           | W192-07  | W192-07_W192-07-EBT-11_20130210   | 2/10/2013   | 2/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 50                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 112                  | 1           | W121-02A | W121-02A_W121-02A-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-104   | MW-104_MW-104-LA-22_20151006      | 10/6/2014   | 10/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 792                  | 1           | W192-01  | W192-01_W192-01-EBT-17_20140812   | 8/12/2014   | 8/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 125                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-103   | MW-103_MW-103-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 1780                 | 1           | W101-05C | W101-05C_W101-05C-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 4050                 | 1           | W192-08  | W192-08_W192-08-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 62.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 1560                 | 1           | W185-06  | W185-06_W185-06-EBT-15_20140205   | 2/5/2014    | 2/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 62.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 4.85                 | 1           | W121-03A | W121-03A_W121-03A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2720                 | 1           | W192-08  | W192-08_W192-08-EBT-14_20131106   | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 50                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 546                  | 1           | W121-02B | W121-02B_W121-02B-EBT-18_20141105 | 11/5/2014   | 11/5/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-101T  | MW-101T_MW-101T-L-S-21_20150408   | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 157                  | 1           | W121-02A | W121-02A_W121-02A-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | B         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 5170                 | 1           | W192-03  | W192-03_W192-03-EBT-16_20140512   | 12/2/2014   | 12/2/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 5000                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 1070                 | 1           | W192-02  | W192-02_W192-02-EBT-17_20140812   | 8/12/2014   | 8/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 125                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-100B  | MW-100B_MW-100B-L-S-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 3730                 | 1           | W121-01A | W121-01A_W121-01A-EBT-17_20140804 | 8/4/2014    | 8/4/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 125                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 48                   | 1           | W121-02A | W121-02A_W121-02A-EBT-12_20130510 | 5/10/2013   | 5/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2430                 | 1           | W192-08  | W192-08_W192-08-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 125                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 217                  | 1           | W121-02A | W121-02A_W121-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 1060                 | 1           | W121-03A | W121-03A_W121-03A-EBT-15_20140206 | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 2340                 | 1           | W101-05A | W101-05A_W101-05A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 988                  | 1           | W185-06  | W185-06_W185-06-EBT-17_20130506   | 5/6/2014    | 5/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 62.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2330                 | 1           | W121-01A | W121-01A_W121-01A-EBT-14_20131017 | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 42.2                 | 1           | W121-03A | W121-03A_W121-03A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 4740                 | 1           | W192-03  | W192-03_W192-03-EBT-18_20141110   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | W101-05B | W101-05B_W101-05B-EBT-13_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2670                 | 1           | W121-01A | W121-01A_W121-01A-EBT-15_20140206 | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 206                  | 1           | W121-03A | W121-03A_W121-03A-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-104   | MW-104_MW-104-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-101T  | MW-101T_MW-101T-L-S-21_20150408   | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 567                  | 1           | W121-01A | W121-01A_W121-01A-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2270                 | 1           | W121-01A | W121-01A_W121-01A-EBT-18_20141110 | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 481                  | 1           | W101-05B | W101-05B_W101-05B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 46.5                 | 1           | MW-101B  | MW-101B_MW-101B-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 25.5                 | 0           | MW-101B  | MW-101B_MW-101B-LA-18_20130112    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 646                  | 1           | W101-07B | W101-07B_W101-07B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 125                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 374                  | 1           | W101-07B | W101-07B_W101-07B-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | B         | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-104   | MW-104_MW-104-LA-18_20131004      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2520                 | 1           | W121-01A | W121-01A_W121-01A-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 1290                 | 1           | W192-01  | W192-01_W192-01-EBT-18_20141110   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 2500                 | 1           | W185-06  | W185-06_W185-06-EBT-16_20140512   | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 297                  | 1           | W101-05B | W101-05B_W101-05B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 634                  | 1           | W192-03  | W192-03_W192-03-EBT-11_20130209   | 9/9/2013    | 9/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-101B  | MW-101B_MW-101B-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 3210                 | 1           | W101-07C | W101-07C_W101-07C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 62.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 1670                 | 1           | W101-05A | W101-05A_W101-05A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | B         | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 144                  | 1           | W121-03A | W121-03A_W121-03A-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-103   | MW-103_MW-103-LA-18_20130112      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-100B  | MW-100B_MW-100B-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 2830                 | 1           | W101-05C | W101-05C_W101-05C-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 4510                 | 1           | W192-08  | W192-08_W192-08-EBT-15_20140210   | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 50                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 1440                 | 1           | W192-02  | W192-02_W192-02-EBT-18_20141110   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-100B  | MW-100B_MW-100B-L-S-19_20140426   | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 270                  | 1           | W192-02  | W192-02_W192-02-EBT-11_20130209   | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 50                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 87                   | 1           | W121-01B | W121-01B_W121-01B-EBT-17_20140804 | 8/4/2014    | 8/4/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 1330                 | 1           | W192-01  | W192-01_W192-01-EBT-14_20131106   | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 25                     |
| Fluval_MEK (2-Butanone)-78-93-3 | 1180                 | 1           | W101-07C | W101-07C_W101-07C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 751                  | 1           | W101-05A | W101-05A_W101-05A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 131                  | 1           | W192-01  | W192-01_W192-01-EBT-12_20130511   | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 2.5                    |
| Fluval_MEK (2-Butanone)-78-93-3 | 1010                 | 1           | W192-02  | W192-02_W192-02-EBT-13_20130814   | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 |           | 12.5                   |
| Fluval_MEK (2-Butanone)-78-93-3 | 2710                 | 1           | W19      |                                   |             |               |                      |        |            |                                  |         |           |                        |

TABLE B.4  
PROJECT 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                   | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                             | CASRN   | Qualifier | Detection Limit (µg/L) |
|--------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|---------------------|--------|------------|----------------------------------|---------|-----------|------------------------|
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-113   | MW-113_MW-113-L5-25_20170419    | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2048  | MW-2048_MW-2048-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2058  | MW-2058_MW-2058-L5-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2038  | MW-2038_MW-2038-L5-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-143   | MW-143_MW-143-L5-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2038  | MW-2038_MW-2038-L5-15_20120420  | 4/20/2012   | 4/20/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-L5-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206A  | MW-206A_MW-206A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-142   | MW-142_MW-142-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-143   | MW-143_MW-143-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-198   | MW-198_MW-198-LB-16_20120423    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-L5-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-L5-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2058  | MW-2058_MW-2058-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-142   | MW-142_MW-142-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-198   | MW-198_MW-198-LB-20_20131011    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206A  | MW-206A_MW-206A-L5-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-142   | MW-142_MW-142-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-142   | MW-142_MW-142-LB-24_20161011    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-L5-21_20150409  | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-L5-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-198   | MW-198_MW-198-LB-16_20121020    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-143   | MW-143_MW-143-L5-21_20150408    | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2048  | MW-2048_MW-2048-L5-25_20170421  | 10/20/2016  | 10/20/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-L5-23_20160425  | 4/25/2016   | 4/25/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-L5-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2058  | MW-2058_MW-2058-LB-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2048  | MW-2048_MW-2048-L5-25_20170421  | 10/20/2016  | 10/20/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206A  | MW-206A_MW-206A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-142   | MW-142_MW-142-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-143   | MW-143_MW-143-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206A  | MW-206A_MW-206A-L5-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-198   | MW-198_MW-198-LA-16_20121020    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2048  | MW-2048_MW-2048-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-198   | MW-198_MW-198-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2058  | MW-2058_MW-2058-L5-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2038  | MW-2038_MW-2038-EBT-11_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 102                  | 1           | MW-2038  | MW-2038_MW-2038-EBT-14_20131017 | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 10                   | 0           | MW-143   | MW-143_MW-143-L5-17_20130411    | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 10                     |
| Fluor_MEK (2-Butanone)-78-93-3 | 641                  | 1           | MW-113   | MW-113_MW-113-EBT-16_20140513   | 5/13/2014   | 5/13/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2048  | MW-2048_MW-2048-L5-25_20170421  | 10/20/2016  | 10/20/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-12_20130511 | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 1160                 | 1           | MW-2038  | MW-2038_MW-2038-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206A  | MW-206A_MW-206A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2048  | MW-2048_MW-2048-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1998  | MW-1998_MW-1998-L5-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2038  | MW-2038_MW-2038-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 216                  | 1           | MW-2038  | MW-2038_MW-2038-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-200   | MW-200_MW-200-LB-24_20160115    | 1/15/2016   | 1/15/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-2058  | MW-2058_MW-2058-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-200   | MW-200_MW-200-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-1978  | MW-1978_MW-1978-EBT-14_20131017 | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 224</                |             |          |                                 |             |               |                     |        |            |                                  |         |           |                        |

TABLE B.4  
PROJECT 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                   | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                             | CASRN   | Qualifier | Detection Limit (µg/L) |
|--------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|---------------------|--------|------------|----------------------------------|---------|-----------|------------------------|
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-21    | MW-21_MW-21-EBT-12_20130610    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-208B  | MW-208B_MW-208B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-208B  | MW-208B_MW-208B-LS-17_20130410 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-219   | MW-219_MW-219-LS-19_20140426   | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-209B  | MW-209B_MW-209B-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-21    | MW-21_MW-21-LS-15_20120421     | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-207B  | MW-207B_MW-207B-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-219   | MW-219_MW-219-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-21    | MW-21_MW-21-LS-20RE_20140623   | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-22    | MW-22_MW22-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-209B  | MW-209B_MW-209B-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 11                   | 1           | MW-21    | MW-21_MW-21-EBT-13_20130610    | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-208B  | MW-208B_MW-208B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 10                   | 0           | MW-219   | MW-219_MW-219-LS-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 10                     |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LS-25_20141020 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-215B  | MW-215B_MW-215B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LS-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-22    | MW-22_MW-22-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-209B  | MW-209B_MW-209B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-21    | MW-21_MW-21-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-208B  | MW-208B_MW-208B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 56.7                 | 1           | MW-21    | MW-21_MW-21-EBT-14_20140211    | 11/8/2012   | 11/8/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-208B  | MW-208B_MW-208B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-209B  | MW-209B_MW-209B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-219   | MW-219_MW-219-LS-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-206B  | MW-206B_MW-206B-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-39    | MW-39_MW-39-LS-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-63B   | MW-63B_MW-63B-LB-20_20141021   | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-25B   | MW-25B_MW-25B-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-64    | MW-64_MW-64-LB-18_20131012     | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-26    | MW-26_MW-26-LS-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-64    | MW-64_MW-64-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 3540                 | 1           | MW-62    | MW-62_MW-62-EBT-18_20141109    | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 62.5                   |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-88    | MW-88_MW-88-LA-21_20150410     | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-269   | MW-269_MW-269-LB-23_20160422   | 7/31/2016   | 7/31/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-263   | MW-263_MW-263-LS-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-259   | MW-259_MW-259-LS-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-258   | MW-258_MW-258-LS-15_20120422   | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-270   | MW-270_MW-270-LS-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-64    | MW-64_MW-64-LS-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 3.95                 | 1           | MW-62    | MW-62_MW-62-LB-24_20161014     | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-266   | MW-266_MW-266-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-26    | MW-26_MW-26-LB-16_20121021     | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-26    | MW-26_MW-26-LB-20_20141020     | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-281   | MW-281_MW-281-SR12116_20161209 | 12/9/2016   | 12/9/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-85    | MW-85_MW-85-EBT-12_20140211    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 1550                 | 1           | MW-270   | MW-270_MW-270-LS-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 62.5                   |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-259   | MW-259_MW-259-LS-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-85    | MW-85_MW-85-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-260   | MW-260_MW-260-LA-18_20131011   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-88    | MW-88_MW-88-LB-16_20121021     | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-270   | MW-270_MW-270_20150730         | 7/30/2015   | 7/30/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-259   | MW-259_MW-259-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-258   | MW-258_MW-258-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-85    | MW-85_MW-85-LB-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-62    | MW-62_MW-62-LS-15_20120421     | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-25A   | MW-25A_MW-25A-LB-16_20121019   | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluor_MEK (2-Butanone)-78-93-3 | 2.5                  | 0           | MW-85    | MW-85_MW-85-LS-15_20120421     | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-     |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| PROJUL Group                     | ProCUL Result (ug/L) | ProCUL Flag | Location   | Sample ID                               | Sample Date | Analysis Date       | Analytical Method   | T or D | COPC Group                       | COPC                             | CASRN   | Qualifier | Detection Limit (ug/L) |
|----------------------------------|----------------------|-------------|------------|-----------------------------------------|-------------|---------------------|---------------------|--------|----------------------------------|----------------------------------|---------|-----------|------------------------|
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-05   | PMW21-05-LB-16, 20120109                | 4/13/2012   | 10/19/2012          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-94A     | MW-94A-MW-94A-L5-15, 20120423           | 4/23/2012   | 8260B5030B/5030C/50 | T                   | VOC    | Methyl Ethyl Ketone (2-butanone) | 78-93-3                          | U       | 2.5       |                        |
| Fluval_MEK (2-Butanone), 78-93-3 | 104                  | 1           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-14, 20131109 | 11/9/2013   | 11/9/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 427                  | 1           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-22, 20151007  | 10/7/2015   | 10/7/2015           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-01   | PMW21-01, PMW21-01-LB-24, 20161013      | 10/13/2016  | 10/13/2016          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-11, 20130305     | 3/5/2013    | 2/5/2013            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LB-20, 20141019  | 10/19/2014  | 10/19/2014          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-18, 20141108 | 11/8/2014   | 11/8/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 3830                 | 1           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-17, 20140809 | 8/9/2014    | 8/9/2014            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 250                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-05   | PMW21-05, PMW21-05-LA-18, 20131012      | 10/12/2013  | 10/12/2013          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 313                  | 1           | PMW21-01   | PMW21-01, PMW21-01-EBT-15, 20140206     | 2/6/2014    | 2/6/2014            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-L5-25, 20170421  | 4/21/2017   | 4/21/2017           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 5                    | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-13, 20130817     | 8/17/2013   | 8/17/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 9                      |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-92      | MW-92, MW92-LA-22, 20151003             | 10/6/2015   | 10/6/2015           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-05   | PMW21-05, PMW21-05-L5, 20150408         | 4/8/2015    | 4/8/2015            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 10                   | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L5-17, 20130410  | 4/10/2013   | 4/10/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 10                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 10                   | 0           | PMW21-03   | PMW21-03, PMW21-03-L5-17, 20130411      | 4/11/2013   | 4/11/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 10                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-05   | PMW21-05, PMW21-05-LA-22, 20151007      | 10/7/2015   | 10/7/2015           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-94A     | MW-94A, MW-94A-LA-18, 20141019          | 10/8/2014   | 10/8/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 11.1                 | 1           | PMW101-03A | PMW101-03A, PMW101-03A-L5-19, 20140426  | 4/26/2014   | 4/26/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-LB-24, 20161014  | 10/14/2016  | 10/14/2016          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 378                  | 1           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-14, 20131109 | 11/9/2013   | 11/9/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-98      | MW-98, MW-98-LA-18, 20131011            | 10/11/2013  | 10/11/2013          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 25                   | 0           | PMW101-02B | PMW101-02B, PMW101-02B-L5-23, 20160423  | 4/23/2016   | 4/23/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-92      | MW-92, MW-92-LB-24, 20161015            | 10/15/2016  | 10/15/2016          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 789                  | 1           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-15, 20140208 | 2/8/2014    | 2/8/2014            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L5-25, 20170420  | 4/20/2017   | 4/20/2017           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-03   | PMW21-03, PMW21-03-L5-15, 20150423      | 4/23/2012   | 4/23/2012           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-01   | PMW21-01, PMW21-01-L5-25, 20161023      | 4/23/2016   | 4/23/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L5-23, 20160423  | 4/23/2016   | 4/23/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L5-21, 20150408  | 4/8/2015    | 4/8/2015            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-92      | MW-92, MW-92-L5-17, 20130410            | 4/10/2013   | 4/10/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-94A     | MW-94A, MW-94A-L5-19, 20140426          | 4/21/2016   | 4/21/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-94A     | MW-94A, MW-94A-L5-19, 20140426          | 4/21/2016   | 4/21/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-98      | MW-98, MW98-LA-22, 20151008             | 10/8/2015   | 10/8/2015           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2850                 | 1           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-L5-19, 20140426  | 4/26/2014   | 4/26/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-02   | PMW21-02, PMW21-02-L5-23, 20160423      | 5/23/2016   | 5/23/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-11, 20130812 | 2/7/2013    | 2/7/2013            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-03   | PMW21-03, PMW21-03-L5-15, 20150408      | 4/8/2015    | 4/8/2015            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 779                  | 1           | PMW21-01   | PMW21-01, PMW21-01-L5-25, 20161023      | 9/7/2014    | 5/7/2014            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LB-20, 20141018  | 10/18/2014  | 10/18/2014          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-04   | PMW21-04, PMW21-04, 20160606            | 6/6/2016    | 6/6/2016            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-L5-23, 20160423  | 4/23/2016   | 4/23/2016           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-12, 20130511     | 5/11/2013   | 5/11/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-15, 20140207 | 2/7/2014    | 2/7/2014            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06A | PMW101-06A, PMW101-06A-L5-21, 20150408  | 4/8/2015    | 4/8/2015            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2110                 | 1           | PMW21-01   | PMW21-01, PMW21-01-EBT-17, 20140805     | 8/5/2014    | 8/5/2014            | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 125                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 589                  | 1           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-13, 20130516 | 5/16/2013   | 5/16/2013           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LB-24, 20161014  | 10/14/2016  | 10/14/2016          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW21-05   | PMW21-05, PMW21-05-L5-15, 20150423      | 4/23/2012   | 4/23/2012           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-07A | PMW101-07A, PMW101-07A-EBT-16, 20140510 | 5/10/2014   | 5/10/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-92      | MW-92, MW-92-L5-15, 20150408            | 4/23/2012   | 4/23/2012           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.88                 | 1           | PMW101-06A | PMW101-06A, PMW101-06A-L5-19, 20140426  | 4/26/2014   | 4/26/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-96      | MW-96, MW-96-LB-24, 20161015            | 10/15/2016  | 10/15/2016          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | MW-96      | MW-96, MW-96-LA-18, 20131011            | 10/11/2013  | 10/11/2013          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2480                 | 1           | PMW21-01   | PMW21-01, PMW21-01-EBT-18, 20141105     | 11/5/2014   | 11/5/2014           | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 250                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | PMW101-06B | PMW101-06B, PMW101-06B-LB-20, 20141019  | 10/19/2014  | 10/19/2014          | 8260B5030B/5030C/50 | T      | VOC                              | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 |                      |             |            |                                         |             |                     |                     |        |                                  |                                  |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                     | ProCUL Result (ug/L) | ProCUL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                             | CASRN   | Qualifier | Detection Limit (ug/L) |
|----------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|----------------------------------|---------|-----------|------------------------|
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-4     | DR1-4_DR1-4-LB-24_20161016          | 10/16/2016  | 10/16/2016    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-6A    | DR1-6A_DR1-6A-LB-16_20121020        | 10/20/2012  | 10/20/2012    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-3     | DR1-3_DR1-3-LB-16_20121019          | 10/19/2012  | 10/19/2012    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 211                  | 1           | IW101-04B | IW101-04B_IW101-04B-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 11.8                 | 1           | IW101-02A | IW101-02A_IW101-02A-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-LB-15_20120422        | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 1420                 | 1           | DR2-2     | DR2-2_DR2-2-EBT-17_20140812         | 8/12/2014   | 8/12/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 8540                 | 1           | DR2-5     | DR2-5_DR2-5-LB-24_20161017          | 10/17/2016  | 10/17/2016    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 250                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 5530                 | 1           | IW101-03C | IW101-03C_IW101-03C-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 250                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 3.03                 | 1           | DR1-6A    | DR1-6A_DR1-6A-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 5420                 | 1           | IW101-02C | IW101-02C_IW101-02C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 625                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 4990                 | 1           | IW101-04A | IW101-04A_IW101-04A-EBT-14_20131103 | 11/10/2013  | 11/10/2013    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | JB        | 625                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR2-3     | DR2-3_DR2-3-LB-18_20131012          | 10/12/2013  | 10/12/2013    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-LB-16_20121020        | 10/20/2012  | 10/20/2012    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 1150                 | 1           | DR2-2     | DR2-2_DR2-2-EBT-17_20140812         | 8/12/2014   | 8/12/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 16400                | 1           | IW101-04A | IW101-04A_IW101-04A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 250                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-4     | DR1-4_DR1-4-LB-22_20151007          | 10/7/2015   | 10/7/2015     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR2-2     | DR2-2_DR2-2-LB-25_20170421          | 4/19/2017   | 4/19/2017     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 388                  | 1           | IW101-02A | IW101-02A_IW101-02A-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 12.5                 | 0           | DR1-5A    | DR1-5A_DR1-5A-LB-23_20160424        | 4/24/2016   | 4/24/2016     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | UJ        | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 2600                 | 1           | DR1-6A    | DR1-6A_DR1-6A-EBT-18_20141107       | 11/7/2014   | 11/7/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 415                  | 1           | IW101-03C | IW101-03C_IW101-03C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 7530                 | 1           | IW101-04A | IW101-04A_IW101-04A-EBT-12_20140510 | 5/10/2014   | 5/10/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 125                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR2-1     | DR2-1_DR2-1-LB-21_20150410          | 4/10/2015   | 4/10/2015     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | UJ        | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-3     | DR1-3_DR1-3-LB-22_20151007          | 10/7/2015   | 10/7/2015     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 35.5                 | 1           | DR1-5A    | DR1-5A_DR1-5A-EBT-14_20131109       | 11/9/2013   | 11/9/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-1A    | DR1-1A_DR1-1A-LB-20161018           | 10/18/2016  | 10/18/2016    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-1     | DR1-1_DR1-1-LB-22_20151007          | 10/7/2015   | 10/7/2015     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 728                  | 1           | IW101-04C | IW101-04C_IW101-04C-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-6     | DR1-6_DR1-6-LB-16_20121020          | 10/20/2012  | 10/20/2012    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR2-3     | DR2-3_DR2-3-LB-15_20120422          | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-6     | DR1-6_DR1-6-LB-15_20120422          | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 795                  | 1           | DR2-5     | DR2-5_DR2-5-EBT-14_20131105         | 11/5/2013   | 11/5/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 811                  | 1           | IW101-03B | IW101-03B_IW101-03B-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 1490                 | 1           | DR1-5     | DR1-5_DR1-5-EBT-15_20140207         | 2/7/2014    | 2/7/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 62.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-3     | DR1-3_DR1-3-LB-19_20140428          | 4/28/2014   | 4/28/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 3.9                  | 1           | IW101-02B | IW101-02B_IW101-02B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 1560                 | 1           | IW101-02C | IW101-02C_IW101-02C-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 155                  | 1           | DR1-6A    | DR1-6A_DR1-6A-EBT-11_20130816       | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 3540                 | 1           | DR2-2     | DR2-2_DR2-2-EBT-16_20140210         | 5/12/2014   | 5/12/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 9.78                 | 1           | IW101-02B | IW101-02B_IW101-02B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 15.9                 | 1           | DR1-6     | DR1-6_DR1-6-EBT-13_20130816         | 8/16/2013   | 8/16/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 12.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 7560                 | 1           | IW101-03C | IW101-03C_IW101-03C-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 125                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-4     | DR1-4_DR1-4-LB-25_20170421          | 4/19/2017   | 4/19/2017     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 413                  | 1           | DR2-2     | DR2-2_DR2-2-EBT-12_20130510         | 5/10/2013   | 5/10/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR2-3     | DR2-3_DR2-3-LB-21_20150410          | 4/10/2015   | 4/10/2015     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | UJ        | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | IW101-02B | IW101-02B_IW101-02B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-1     | DR1-1_DR1-1-LB-18_20161012          | 10/12/2013  | 10/12/2013    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-6     | DR1-6_DR1-6-LB-24_20161014          | 10/14/2016  | 10/14/2016    | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 4580                 | 1           | IW101-03C | IW101-03C_IW101-03C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 62.5                   |
| Fluval_MEK (2-Butanone), 78-93-3 | 40.2                 | 1           | IW101-02B | IW101-02B_IW101-02B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 33.9                 | 1           | DR1-5A    | DR1-5A_DR1-5A-LB-25_20170421        | 5/12/2014   | 5/12/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR2-3     | DR2-3_DR2-3-LB-17_20130410          | 4/10/2013   | 4/10/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-3     | DR1-3_DR1-3-LB-23_20160423          | 4/23/2016   | 4/23/2016     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 49.5                 | 1           | DR1-6     | DR1-6_DR1-6-EBT-18_20141107         | 11/7/2014   | 11/7/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 182                  | 1           | IW101-02C | IW101-02C_IW101-02C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 7.38                 | 1           | DR1-6     | DR1-6_DR1-6-EBT-15_20140209         | 2/9/2014    | 2/9/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | JB        | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 2.5                  | 0           | DR1-5     | DR1-5_DR1-5-LB-15_20120422          | 4/22/2012   | 4/22/2012     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 3340                 | 1           | IW101-04B | IW101-04B_IW101-04B-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 50                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 1970                 | 1           | IW101-03B | IW101-03B_IW101-03B-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 25                     |
| Fluval_MEK (2-Butanone), 78-93-3 | 400                  | 1           | DR1-4     | DR1-4_DR1-4-EBT-16_20140509         | 5/9/2014    | 5/9/2014      | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3 | 1690                 | 1           | DR2-2     | DR2-2_DR2-2-EBT-13_20130814         | 8/14/2013   | 8/14/2013     | 82608/50308/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3 | J         | 62.5</                 |



TABLE B.4  
PROJCL B.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| PROJCL Group                                  | ProCFL Result (ug/L) | ProCFL Flag | Location | Sample ID                           | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                             | CASRN     | Qualifier | Detection Limit (ug/L) |
|-----------------------------------------------|----------------------|-------------|----------|-------------------------------------|-------------|---------------|---------------------|--------|------------|----------------------------------|-----------|-----------|------------------------|
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-24, 20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW85-05 | PMW85-05, PMW85-05-L5-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-L5-19, 20140204  | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 183                  | 1           | PMW85-01 | PMW85-01, PMW85-01-EBT-15, 20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | B         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-L5-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-11, 20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LA-22, 20151006  | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW85-05 | PMW85-05, PMW85-05-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW85-05 | PMW85-05, PMW85-05-LB-16, 20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-L5-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-L5-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 59.6                 | 1           | PMW85-01 | PMW85-01, PMW85-01-EBT-12, 20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-13, 20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-03 | PMW92-03, PMW92-03-EBT-12, 20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 25.8                 | 1           | PMW95-01 | PMW95-01, PMW95-01-EBT-17, 20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW21-05 | PMW21-05, PMW21-05-L5-20, 20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-L5-17, 20130411  | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 10                     |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW92-02 | PMW92-02, PMW92-02-LB-20, 20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW85-05 | PMW85-05, PMW85-05-LB-24, 20161015  | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_MEK (2-Butanone), 78-93-3              | 2.5                  | 0           | PMW85-05 | PMW85-05, PMW85-05-EBT-16, 20140512 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 24.4                 | 1           | MW-100B  | MW-100B, MW-100B-LA-18, 20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.5                  | 0           | W121-02A | W121-02A, W121-02A-EBT-13, 20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W121-01A | W121-01A, W121-01A-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 11.9                 | 1           | W121-04B | W121-04B, W121-04B-EBT-17, 20140806 | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 9                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W101-05C | W101-05C, W101-05C-EBT-13, 20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 1.33                 | 1           | W101-07A | W101-07A, W101-07A-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.5                  | 0           | W101-02B | W101-02B, W101-02B-EBT-12, 20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 13.2                 | 1           | W121-04A | W121-04A, W121-04A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 10                   | 0           | W121-04A | W121-04A, W121-04A-EBT-13, 20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 10                     |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0.5                  | 0           | MW-103   | MW-103, MW-103-LB-24, 20161021      | 10/21/2016  | 10/21/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 10.9                 | 0.5         | W105-05  | W105-05, W105-05-EBT-17, 20140811   | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 22.5                 | 1           | MW-100B  | MW-100B, MW-100B-L5-21, 20150408    | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 3.23                 | 1           | W101-05B | W101-05B, W101-05B-EBT-13, 20130817 | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 4.36                 | 1           | MW-101T  | MW-101T, MW-101T-LB-24, 20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0.5                  | 0           | MW-103   | MW-103, MW-103-LA-22, 20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W101-05C | W101-05C, W101-05C-EBT-13, 20130811 | 8/11/2013   | 8/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 12.5                 | 0           | W121-07  | W121-07, W121-07-EBT-15, 20140205   | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 12.5                   |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0.5                  | 0           | MW-103   | MW-103, MW-103-LA-18, 20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0                    | 0           | W121-02A | W121-02A, W121-02A-EBT-17, 20140805 | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.5                  | 0           | W101-05C | W101-05C, W101-05C-EBT-13, 20130818 | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 22.7                 | 1           | MW-100B  | MW-100B, MW-100B-L5-19, 20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 6.95                 | 1           | W121-03B | W121-03B, W121-03B-EBT-18, 20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W101-07C | W101-07C, W101-07C-EBT-14, 20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 1.14                 | 1           | MW-101T  | MW-101T, MW-101T-L5-15, 20150423    | 4/23/2015   | 4/23/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.64                 | 1           | W101-05B | W101-05B, W101-05B-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W121-01  | W121-01, W121-01-EBT-14, 20131106   | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0.5                  | 0           | W121-02B | W121-02B, W121-02B-EBT-12, 20130506 | 5/6/2013    | 5/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0.5                  | 0           | W121-08  | W121-08, W121-08-EBT-12, 20130509   | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.5                  | 0           | W121-02A | W121-02A, W121-02A-EBT-12, 20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.5                  | 0           | W121-02A | W121-02A, W121-02A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 17.3                 | 1           | W101-05B | W101-05B, W101-05B-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 12.5                 | 0           | W121-05  | W121-05, W121-05-EBT-15, 20140205   | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 12.5                   |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W101-07C | W101-07C, W101-07C-EBT-17, 20140807 | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 25                   | 0           | W121-01  | W121-01, W121-01-EBT-17, 20140812   | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 25                     |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 12.2                 | 0.5         | W121-02A | W121-02A, W121-02A-EBT-17, 20140812 | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W121-05  | W121-05, W121-05-EBT-16, 20140511   | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W121-08  | W121-08, W121-08-EBT-18, 20141106   | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W101-07C | W101-07C, W101-07C-EBT-15, 20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 25                   | 0           | W101-04C | W101-04C, W101-04C-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 25                     |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 5                    | 0           | W101-07B | W101-07B, W101-07B-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 5                      |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 0.5                  | 0           | W101-07B | W101-07B, W101-07B-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl t-butyl ether (MTBE), 1634-04-4 | 2.5                  | 0           | W121-08  | W121-08, W121-08-EBT-13, 20130815   | 8           |               |                     |        |            |                                  |           |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                                 | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                    | CASRN     | Qualifier | Detection Limit (ug/L) |
|----------------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|-------------------------|-----------|-----------|------------------------|
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 31.8                 | 1           | MW-1008  | MW-1008_MW-1008-LB-24_20161013    | 10/17/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 25                   | 0           | W101-04C | W101-04C_W101-04C-EBT-18_20141107 | 11/17/2014  | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | W101-07C | W101-07C_W101-07C-EBT-18_20130813 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 4.16                 | 1           | MW-101B  | MW-101B_MW-101B-LB-15_20130411    | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.81                 | 1           | MW-101T  | MW-101T_MW-101T-LB-15_20130411    | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | W101-07C | W101-07C_W101-07C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | W121-02B | W121-02B_W121-02B-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | W192-07  | W192-07-EBT-13_20130815           | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-104   | MW-104_MW-104-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 6.02                 | 1           | MW-101B  | MW-101B_MW-101B-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | W195-05  | W195-05-EBT-17_20140811           | 8/11/2014   | 8/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204A  | MW-204A_MW-204A-LB-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204A  | MW-204A_MW-204A-LB-25_20170419    | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | MW-113   | MW-113_MW-113-EBT-15_20140210     | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 3.91                 | 1           | MW-142   | MW-142_MW-142-LB-16_20140220      | 2/20/2012   | 2/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.26                 | 1           | MW-200   | MW-200_MW-200-LB-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | MW-113   | MW-113_MW-113-EBT-11_20140109     | 1/9/2013    | 1/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | MW-113   | MW-113_MW-113-EBT-14_20131013     | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.64                 | 1           | MW-142   | MW-142_MW-142-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 3.06                 | 1           | MW-203B  | MW-203B_MW-203B-EBT-15_20140210   | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | MW-204A  | MW-204A_MW-204A-LB-25_20170419    | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-205B  | MW-205B_MW-205B-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-EBT-18_20140210     | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 10                   | 0           | MW-113   | MW-113_MW-113-EBT-13_20130813     | 8/13/2013   | 8/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 10                     |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 3.33                 | 1           | MW-206A  | MW-206A_MW-206A-LB-23_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.917                | 1           | MW-200   | MW-200_MW-200-LB-25_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.97                 | 1           | MW-205B  | MW-205B_MW-205B-LB-25_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 4.71                 | 1           | MW-205B  | MW-205B_MW-205B-LB-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-15_20130410    | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-19_20140425    | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-200   | MW-200_MW-200-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.68                 | 1           | MW-205B  | MW-205B_MW-205B-LB-25_20160421    | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-15_20120421      | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.19                 | 1           | MW-200   | MW-200_MW-200-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | MW-113   | MW-113_MW-113-EBT-18_20141111     | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 2.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-19_20140425    | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.1                  | 1           | MW-205B  | MW-205B_MW-205B-LB-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | MW-143   | MW-143_MW-143-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.05                 | 1           | MW-143   | MW-143_MW-143-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-206B  | MW-206B_MW-206B-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.97                 | 1           | MW-205B  | MW-205B_MW-205B-LB-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-EBT-18_20141111     | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-200   | MW-200_MW-200-LB-17_20130410      | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-113   | MW-113_MW-113-LB-22_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.26                 | 1           | MW-142   | MW-142_MW-142-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-204B  | MW-204B_MW-204B-LB-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 4.36                 | 1           | MW-206A  | MW-206A_MW-206A-LB-24_20161014    | 10/20/2016  | 10/20/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | MW-113   | MW-113_MW-113-EBT-17_20140811     | 8/11/2014   | 8/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.09                 | 1           | MW-206B  | MW-206B_MW-206B-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-199B  | MW-199B_MW-199B-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 16        |           |                        |



TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                                 | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                    | CASRN     | Qualifier | Detection Limit (µg/L) |
|----------------------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|----------------------|--------|------------|-------------------------|-----------|-----------|------------------------|
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-22    | MW-22_MW-22-LB-24_20161016     | 10/16/2016  | 10/16/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-L5-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-22_20151009   | 10/09/2015  | 10/09/2015    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | MW-21    | MW-21_MW-21-EBT-16_20140507    | 5/7/2014    | 5/7/2014      | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | UJ        | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-L5-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-21_20140426   | 4/26/2014   | 4/26/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.39                 | 1           | MW-21    | MW-21_MW-21-LB-16_20121020     | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LB-16_20121019   | 10/19/2012  | 10/19/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5.52                 | 1           | MW-21    | MW-21_MW-21-EBT-12_20130510    | 5/10/2013   | 5/10/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-L5-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-LA-22_20151008 | 10/08/2015  | 10/08/2015    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-L5-15_20140223   | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-21    | MW-21_MW-21-EBT-18_20141016    | 11/6/2014   | 11/6/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-L5-22_20160421   | 4/21/2016   | 4/21/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-L5-15_20140423 | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-25_20170422   | 4/22/2017   | 4/22/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-25_20170422   | 4/19/2017   | 4/19/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | MW-21    | MW-21_MW-21-EBT-17_20140805    | 8/5/2014    | 8/5/2014      | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | UJ        | 2.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-22    | MW-22_MW-22-LB-20_20141018     | 10/18/2014  | 10/18/2014    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-L5-23_20160421 | 4/19/2016   | 4/19/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-14_20131111  | 11/11/2013  | 11/11/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-22    | MW-22_MW-22-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | MW-219   | MW-219_MW-219-L5-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-LB-24_20161014 | 10/20/2016  | 10/20/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.09                 | 1           | MW-21    | MW-21_MW-21-EBT-15_20140408    | 2/8/2014    | 2/8/2014      | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-L5-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-L5-19_20140426 | 4/26/2014   | 4/26/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-L5-22_20160421   | 4/21/2016   | 4/21/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-L5-15_20140423 | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 4.17                 | 1           | MW-2158  | MW-2158_MW-2158-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LB-24_20161016   | 10/16/2016  | 10/16/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.991                | 1           | MW-2158  | MW-2158_MW-2158-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2108  | MW-2108_MW-2108-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-L5-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-L5-23_20160421 | 4/19/2016   | 4/19/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-L5-19_20140426 | 4/25/2014   | 4/25/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-213   | MW-213_MW-213-L5-15_20140421   | 4/21/2012   | 4/21/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 4.47                 | 1           | MW-21    | MW-21_MW-21-L5-23RC_20160523   | 5/23/2016   | 5/23/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-L5-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | MW-213   | MW-213_MW-213-L5-23_20160424   | 4/24/2016   | 4/24/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-L5-25_20170422 | 4/22/2017   | 4/22/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-15_20140423   | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-218   | MW-218_MW-218-LB-24_20161014   | 4/19/2016   | 4/19/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-212   | MW-212_MW-212-EBT-11_20130211  | 2/11/2013   | 2/11/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-2098  | MW-2098_MW-2098-LB-24_20161013 | 10/13/2016  | 10/13/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-23_20170421   | 4/20/2017   | 4/20/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-219   | MW-219_MW-219-L5-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-26    | MW-26_MW-26-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-26    | MW-26_MW-26-LB-16_20121021     | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-88    | MW-88_MW-88-L5-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.41                 | 1           | MW-265   | MW-265_MW-265-L5-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-63A   | MW-63A_MW-63A-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-257   | MW-257_MW-257-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-259   | MW-259_MW-259-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.86                 | 1           | MW-39    | MW-39_MW-39-LB-24_20161019     | 10/19/2016  | 10/19/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-269   | MW-269_MW-269-SR150731         | 7/31/2015   | 7/31/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-85    | MW-85_MW-85-EBT-17_20140810    | 8/10/2014   |               |                      |        |            |                         |           |           |                        |

TABLE B.4  
PROJUL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                                 | ProUCL Result (µg/L) | ProUCL Flag | Location   | Sample ID                             | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                    | CASRN     | Qualifier | Detection Limit (µg/L) |
|----------------------------------------------|----------------------|-------------|------------|---------------------------------------|-------------|---------------|----------------------|--------|------------|-------------------------|-----------|-----------|------------------------|
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-261     | MW-261_MW-261-LB-24_20161014          | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-260     | MW-260_MW-260-LB-20_20141020          | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-270     | MW-270_MW-270-LB-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-64      | MW-64_MW-64-LB-16_20121021            | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 36                   | 1           | MW-279     | MW-279_MW-279-LB-25_20170420          | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 2.38                 | 1           | MW-265     | MW-265_MW-265-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-259     | MW-259_MW-259-LB-25_20170419          | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 5.41                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-11_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 2.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.8                  | 1           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-92      | MW-92_MW92-LA-22_20151006             | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.629                | 1           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 19.3                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-98      | MW-98_MW-98-LA-25_20150423            | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-02A | PMW101-02A_PMW101-02A-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-92      | MW-92_MW-92-LA-25_20140424            | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05   | PMW21-05_PMW21-05-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 2.96                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.978                | 1           | PMW101-02A | PMW101-02A_PMW101-02A-LB-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 5                    | 0           | PMW101-02A | PMW101-02A_PMW101-02A-LB-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 5                      |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-19_20140425          | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 14.4                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LB-21_20150408      | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.938                | 1           | MW-94A     | MW-94A_MW-94A-LB-20_20141015          | 10/15/2014  | 10/15/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 14.7                 | 1           | PMW21-01   | PMW21-01_PMW21-01-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 2.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05   | PMW21-05_PMW21-05-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 9.29                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.7                  | 1           | PMW101-07A | PMW101-07A_PMW101-07A-LB-23_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 2.66                 | 1           | PMW101-07A | PMW101-07A_PMW101-07A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 2.51                 | 1           | PMW101-07A | PMW101-07A_PMW101-07A-LB-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.845                | 1           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 5.1                  | 1           | PMW21-01   | PMW21-01_PMW21-01-EBT-14_20130817     | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 29.2                 | 1           | PMW21-01   | PMW21-01_PMW21-01-EBT-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 1                      |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.635                | 1           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 12.1                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.558                | 1           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 5.35                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 1.9                  | 1           | PMW101-02A | PMW101-02A_PMW101-02A-LB-23_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 13.5                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05   | PMW21-05_PMW21-05-LB-24_20161014      | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 4.57                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LB-21_20150408      | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-02B | PMW101-02B_PMW101-02B-LB-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05   | PMW21-05_PMW21-05-LB-25_20150423      | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 5                    | 0           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 3.44                 | 1           | PMW101-02B | PMW101-02B_PMW101-02B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 2.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 2.74                 | 1           | MW-94A     | MW-94A_MW-94A-LB-20_20141015          | 10/15/2014  | 10/15/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07B | PMW101-07B_PMW101-07B-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-17_20140425          | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-94A     | MW-94A_MW-94A-LB-21_20150409          | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.713                | 1           | MW-94A     | MW-94A_MW-94A-LB-20_20141015          | 10/15/2014  | 10/15/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 3.01                 | 1           | PMW101-07A | PMW101-07A_PMW101-07A-LB-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-92      | MW-92_MW92-LA-22_20151006             | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 19.8                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LB-20_20141018      | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | MW-98      | MW-98_MW-98-LB-16_20121020            | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 25.2                 | 1           | PMW21-03   | PMW21-03_PMW21-03-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.574                | 1           | PMW101-07A | PMW101-07A_PMW101-07A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | J         | 0.5                    |
| Fluval_Methyl_t-butyl_ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW101     |                                       |             |               |                      |        |            |                         |           |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                                 | ProCUL Result (ug/L) | ProCUL Flag | Location  | Sample ID                           | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                    | CASRN     | Qualifier | Detection Limit (ug/L) |
|----------------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|---------------|----------------------|--------|------------|-------------------------|-----------|-----------|------------------------|
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-14_20131106         | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-L-LS-25_20130206        | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-11_20130206         | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | WI101-03B | WI101-03B_WI101-03B-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-3     | DR2-3_DR2-3-L-LS-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-6     | DR2-6_DR2-6-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-6     | DR2-6_DR2-6-L-LS-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 7.79                 | 1           | WI101-02B | WI101-02B_WI101-02B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-12_20130512         | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 8.32                 | 1           | WI101-02B | WI101-02B_WI101-02B-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-3     | DR2-3_DR2-3-LB-20_20141020          | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-2     | DR1-2_DR1-2-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 38.8                 | 1           | DR1-5     | DR1-5_DR1-5-EBT-17_20140807         | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 10                   | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 10                     |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-8     | DR1-8_DR1-8-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-8     | DR1-8_DR1-8-LB-16_20121013          | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6A    | DR1-6A_DR1-6A-EBT-12_20130512       | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 9.92                 | 1           | WI101-02B | WI101-02B_WI101-02B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 10                   | 0           | DR2-5     | DR2-5_DR2-5-EBT-18_20141111         | 11/11/2014  | 11/11/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 10                     |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 31.8                 | 1           | DR1-5     | DR1-5_DR1-5-LB-16_20121020          | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.73                 | 1           | DR1-3     | DR1-3_DR1-3-L-LS-17_20140411        | 4/11/2014   | 4/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-2     | DR1-2_DR1-2-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 3.13                 | 1           | DR1-4     | DR1-4_DR1-4-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 3.17                 | 1           | DR1-4     | DR1-4_DR1-4-LB-20_20141019          | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 6.5                  | 1           | WI101-03B | WI101-03B_WI101-03B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-1     | DR1-1_DR1-1-LB-20_20141018          | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 1.19                 | 1           | DR1-4     | DR1-4_DR1-4-LA-18_20131012          | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-16_20140508       | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-5     | DR2-5_DR2-5-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 19.6                 | 1           | DR1-3     | DR1-3_DR1-3-L-LS-23_20160423        | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | WI101-04B | WI101-04B_WI101-04B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-15_20140209         | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-17_20140807         | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-1     | DR1-1_DR1-1-LA-18_20141018          | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 7.48                 | 1           | WI101-02B | WI101-02B_WI101-02B-EBT-18_20141106 | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | WI101-04C | WI101-04C_WI101-04C-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-6     | DR2-6_DR2-6-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-3     | DR2-3_DR2-3-L-LS-17_20140410        | 4/10/2014   | 4/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 11                   | 1           | DR1-3     | DR1-3_DR1-3-L-LS-21_20150408        | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | DR2-5     | DR2-5_DR2-5-EBT-16_20140512         | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | WI101-02C | WI101-02C_WI101-02C-EBT-13_20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-1     | DR1-1_DR1-1-LB-24_20161015          | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-14_20131109         | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-2     | DR1-2_DR1-2-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 18.4                 | 1           | DR1-3     | DR1-3_DR1-3-L-LS-25_20170419        | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | WI101-02C | WI101-02C_WI101-02C-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-6     | DR2-6_DR2-6-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-2     | DR2-2_DR2-2-EBT-15_20140210         | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-5     | DR2-5_DR2-5-EBT-17_20140807         | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-2     | DR2-2_DR2-2-EBT-11_20130209         | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-1     | DR2-1_DR2-1-LB-16_20121021          | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-2     | DR2-2_DR2-2-LB-16_20121022          | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-2     | DR2-2_DR2-2-EBT-11_20130209         | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | DR1-5A    | DR1-5A_DR1-5A-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 11.2                 | 1           | WI101-03A | WI101-03A_WI101-03A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 2.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | WI101-03C | WI101-03C_WI101-03C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-1A    | DR1-1A_DR1-1A-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR2-6     | DR2-6_DR2-6-EBT-15_20140210         | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | DR1-6     | DR1-6_DR1-6-EBT-16_20140508         | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluval_Methyl_t-butyl ether (MTBE)_1634-04-4 | 10                   | 0           | WI101-02C | WI101-02C_WI101-02C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 |        |            |                         |           |           |                        |

TABLE B.4  
PROJECT S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                                | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                            | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                    | CASRN     | Qualifier | Detection Limit (µg/L) |
|---------------------------------------------|----------------------|-------------|----------|--------------------------------------|-------------|---------------|---------------------|--------|------------|-------------------------|-----------|-----------|------------------------|
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-12_1, 20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LS-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-12_20160421    | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | PMW92-02 | PMW92-02_PMW92-02-LS-17_20130411     | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-LB_20121022        | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-13_20130813    | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LS-19_20140424     | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LS-21_20150410     | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05 | PMW21-05_PMW21-05-LS-23_20160423     | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LB_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 2.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-14_20131105    | 11/5/2013   | 11/5/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 2.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LA-22_20151006     | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-18_20141110    | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-18_20141109    | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-17_20140811    | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-LS-23_20160422     | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-LS-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-02 | PMW92-02_PMW92-02-LB_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-12_20130509    | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-LB-16_20121022     | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-11_20131029    | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-06 | PMW92-06_PMW92-06-L5_20120421        | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-LS-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-18_20141110    | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 10                   | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-15_20140211    | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 10                     |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-14_20141105    | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 5                      |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-LS-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-17_20140811    | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-14_20131106    | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-18_20141110    | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-15_20140210    | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-11_20131029    | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-13_20130813    | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05 | PMW21-05_PMW21-05-LS-21_20150408     | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-18_20141110    | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-13_20130813    | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-EBT-16_20140512    | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW85-05 | PMW85-05_PMW85-05-LS-23_20160422     | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-14_20141105    | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methyl t-butyl ether (MTBE)_1634-04-4 | 0.5                  | 0           | PMW21-05 | PMW21-05_PMW21-05-LS-25_20170420     | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether | 1634-04-4 | U         | 0.5                    |
| Fluor_Methylene chloride_75-09-2            | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-12_20130513    | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 2.5                    |
| Fluor_Methylene chloride_75-09-2            | 2.5                  | 0           | W101-04B | W101-04B_W101-04B-EBT-17_20140806    | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 2.5                    |
| Fluor_Methylene chloride_75-09-2            | 2.5                  | 0           | W101-01A | W101-01A_W101-01A-EBT-18_20141109    | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 2.5                    |
| Fluor_Methylene chloride_75-09-2            | 6.25                 | 0           | W85-06   | W85-06_W85-06-EBT-13_20130815        | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 6.25                   |
| Fluor_Methylene chloride_75-09-2            | 5                    | 0           | W92-08   | W92-08_W92-08-EBT-16_20140512        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 5                      |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | MW-103   | MW-103_MW-103-LB-24_20161015         | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-12_20130508    | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | MW-101B  | MW-101B_MW-101B-LA-18_20131012       | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | MW-101T  | MW-101T_MW-101T-LS-15_20120423       | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-18_20141105    | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 2.5                    |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-15_20140208    | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | W101-01B | W101-01B_W101-01B-EBT-13_20130818    | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | MW-100B  | MW-100B_MW-100B-LS-25_20170420       | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | W101-01B | W101-01B_W101-01B-EBT-18_20141109    | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 12.5                 | 0           | W92-02   | W92-02_W92-02-EBT-13_20130814        | 8/14/2013   | 8/14/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 12.5                   |
| Fluor_Methylene chloride_75-09-2            | 12.5                 | 0           | W101-04C | W101-04C_W101-04C-EBT-18_20141107    | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 12.5                   |
| Fluor_Methylene chloride_75-09-2            | 0.373                | 1           | W101-07B | W101-07B_W101-07B-EBT-17_20140807    | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | J         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 1.25                 | 0           | W92-07   | W92-07_W92-07-EBT-13_20130815        | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 1.25                   |
| Fluor_Methylene chloride_75-09-2            | 0.25                 | 0           | MW-104   | MW-104_MW-104-LB-18_20131012         | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 0.25                   |
| Fluor_Methylene chloride_75-09-2            | 2.5                  | 0           | W101-04B | W101-04B_W101-04B-EBT-11_20130206    | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 2.5                    |
| Fluor_Methylene chloride_75-09-2            | 32.2                 | 1           | W85-06   | W85-06_W85-06-EBT-17_20140812        | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride      | 75-09-2   | U         | 6.25                   |
| Fluor_Methylene chloride_75-09-2            | 2.5                  | 0           | W92-03   | W92-03_W92-03-EBT-14_20131106        | 11/6/2013   | 11/6/2013     | 8260B5              |        |            |                         |           |           |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                        | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|-------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | W101-05C | W101-05C_W101-05C-EBT-12_20130507 | 5/7/2013    | 5/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-04B | W101-04B_W101-04B-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-104   | MW-104_MW-104-L5-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-03B | W101-03B_W101-03B-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-04C | W101-04C_W101-04C-EBT-14_20131111 | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | W101-07B | W101-07B_W101-07B-EBT-13_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 5                    | 0           | W101-07C | W101-07C_W101-07C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 5                      |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-02A | W101-02A_W101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 2.76                 | 1           | W101-05C | W101-05C_W101-05C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | J         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-13_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | J         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 46                   | 1           | W101-05A | W101-05A_W101-05A-EBT-16_20140512 | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-04A | W101-04A_W101-04A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 2.99                 | 1           | W101-05A | W101-05A_W101-05A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | J         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | W101-01A | W101-01A_W101-01A-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | W101-04A | W101-04A_W101-04A-EBT-15_20140207 | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-13_20130817 | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 25.4                 | 1           | W101-02A | W101-02A_W101-02A-EBT-16_20140512 | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | J         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | W101-02A | W101-02A_W101-02A-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1                    | 0           | MW-20B   | MW-20B_W101-01B-EBT-13_20130411   | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1                      |
| Fluoride_Methylene chloride_75-09-2 | 6.25                 | 0           | W101-05C | W101-05C_W101-05C-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 6.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | W101-03B | W101-03B_W101-03B-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-05C | W101-05C_W101-05C-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 18.9                 | 1           | W101-02A | W101-02A_W101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | J         | 6.25                   |
| Fluoride_Methylene chloride_75-09-2 | 37.7                 | 1           | W101-02A | W101-02A_W101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | J         | 12.5                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-100B  | MW-100B_MW-100B-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 12.5                 | 0           | W101-04C | W101-04C_W101-04C-EBT-11_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 12.5                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-01A | W101-01A_W101-01A-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 5                    | 0           | W101-02A | W101-02A_W101-02A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 5                      |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-104   | MW-104_MW-104-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.5                  | 0           | W101-01B | W101-01B_W101-01B-EBT-13_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | W101-02B | W101-02B_W101-02B-EBT-17_20140805 | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-143   | MW-143_MW-143-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | MW-113   | MW-113_MW-113-EBT-15_20140210     | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-199B  | MW-199B_MW-199B-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-204B  | MW-204B_MW-204B-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | MW-20B   | MW-20B_MW-20B-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.                   |             |          |                                   |             |               |                      |        |            |                    |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
MAXIMUM HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                         | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|--------------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW2098-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW2098-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LS-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-22    | MW-22_MW-22-LB-24_20161016     | 10/16/2016  | 10/16/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-16_20140510  | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LA-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-15_20140208    | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LA-13_20130411 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-19_20140424   | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 2.5                  | 0           | MW-21    | MW-21_MW-21-EBT-16_20140507    | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-15_20131011  | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LS-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-22    | MW-22_MW-22-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LS-17_20130411 | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 1.25                 | 0           | MW-218   | MW-218_MW-218-LB-20_20141021   | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 1.25                 | 0           | MW-21    | MW-21_MW-21-EBT-17_20140805    | 8/5/2014    | 8/5/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 1.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LS-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-20_20140421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-20_20140421   | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-23_20140421   | 4/21/2014   | 4/21/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-13_20130817    | 8/17/2013   | 8/17/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LS-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-16_20121020   | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2078  | MW-2078_MW-2078-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LS-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LB-20_20141021   | 10/12/2014  | 10/12/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-14_20131108    | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2108  | MW-2108_MW-2108-LS-19_20140426 | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-17_20140810  | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2088  | MW-2088_MW-2088-LB-16_20121020 | 10/12/2012  | 10/12/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2098  | MW-2098_MW-2098-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-20_20140420   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-20_20141021   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-20_20141021 | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 1.25                 | 0           | MW-213   | MW-213_MW-213-LB-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-213   | MW-213_MW-213-LB-25_20170421   | 10/22/2013  | 10/22/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-213   | MW-213_MW-213-EBT-16_20140511  | 5/11/2014   | 5/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 2.5                  | 0           | MW-213   | MW-213_MW-213-LB-23_20160422   | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-213   | MW-213_MW-213-EBT-14_20130820  | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-14_20131111  | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-213   | MW-213_MW-213-LB-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 2.5                  | 0           | MW-213   | MW-213_MW-213-EBT-17_20140810  | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-2158  | MW-2158_MW-2158-LA-18_20131012 | 11/20/2013  | 11/20/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluoride_Methylene chloride, 75-09-2 | 1.25                 | 0           | MW-213   | MW-213_M                       |             |               |                      |        |            |                    |         |           |                        |



TABLE B.4  
PROJULS.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                      | ProCUL Result (ug/L) | ProCUL Flag | Location    | Sample ID                               | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|-------------|-----------------------------------------|-------------|---------------|---------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-267      | MW-267_MW-267-LB-24_20161015            | 8/10/2016   | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-62       | MW-62_MW-62-EBT-13_20130820             | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-63A      | MW-63A_MW-63A-LA-22_20151007            | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-39       | MW-39_MW39-LA-22_20151008               | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-62       | MW-62_MW-62-LS-15_20120421              | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-14_20131106             | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-267      | MW-267_MW-267-LA-22_20151007            | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-39       | MW-39_MW-39-LB-16_20121020              | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-52       | MW-52_MW-52-LB-24_20161015              | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-39       | MW-39_MW39-LB-20_20141019               | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94       | MW-94_MW-94-LS-25_20170421              | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-39       | MW-39_MW-39-LB-17_20130410              | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-279      | MW-279_MW279-SR11216_20161209           | 12/9/2016   | 12/9/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-271      | MW-271_MW-271-LB-24_20161015            | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 2.5                  | 0           | MW-62       | MW-62_MW-62-EBT-16_20140510             | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-271      | MW-271_MW-271-SR11216_20150516          | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-279      | MW-279_MW-279-LS-25_20170420            | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-88       | MW-88_MW-88-LS-25_20170419              | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-270      | MW-270_MW-270_20150730                  | 7/30/2015   | 7/30/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-271      | MW-271_MW-271-LA-22_20151007            | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-39       | MW-39_MW-39-LS-15_20120423              | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-269      | MW-269_MW-269-LA-22_20151008            | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-62       | MW-62_MW-62-LB-16_20121022              | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-267      | MW-267_MW-267-SR11216_20150516          | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-17_20140810             | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-39       | MW-39_MW-39-LA-18_20131011              | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-85       | MW-85_MW-85-EBT-17_20130814             | 8/14/2013   | 8/14/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.305                | 0           | MW-92       | MW-92_MW-92-LB-16_20121020              | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-270      | MW-270_MW-270-LA-22_20151007            | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.5                  | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-EBT-14_20131107     | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.5                    |
| Fluor_Methylene chloride, 75-09-2 | 1                    | 0           | PMMW21-05   | PMMW21-05_PMMW21-05-LB-17_20130401      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1                      |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW101-02A | PMMW101-02A_PMMW101-02A-EBT-15_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-92       | MW-92_MW-92-LA-18_20131012              | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-98       | MW-98_MW-98-LS-19_20140425              | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 2.5                  | 0           | PMMW101-02A | PMMW101-02A_PMMW101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94A      | MW-94A_MW-94A-LS-21_20150410            | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94A      | MW-94A_MW-94A-LB-16_20121021            | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW101-02A | PMMW101-02A_PMMW101-02A-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-05   | PMMW21-05_PMMW21-05-LB-15_20140206      | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 1.25                 | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-05   | PMMW21-05_PMMW21-05-LB-15_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94A      | MW-94A_MW-94A-LB-18_20131012            | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94A      | MW-94A_MW-94A-LB-20_20141020            | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-EBT-16_20140508     | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-LS-23RE_20160523    | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.5                  | 0           | PMMW101-02A | PMMW101-02A_PMMW101-02A-EBT-15_20140208 | 2/18/2014   | 2/18/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.5                    |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-92       | MW-92_MW-92-LS-23_20160420              | 4/20/2016   | 4/20/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94A      | MW-94A_MW-94A-LS-15_20120423            | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-03   | PMMW21-03_PMMW21-03-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-98       | MW-98_MW-98-LS-19_20140425              | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-EBT-12_20130511     | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW101-02A | PMMW101-02A_PMMW101-02A-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 2.5                  | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-92       | MW-92_MW-92-LS-21_20150410              | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-LS-23RE_20160523    | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 1.25                 | 0           | PMMW101-02A | PMMW101-02A_PMMW101-02A-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-92       | MW-92_MW-92-LS-25_20170419              | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW101-07B | PMMW101-07B_PMMW101-07B-LA-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-EBT-13_20130818     | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 1.25                 | 0           | PMMW21-01   | PMMW21-01_PMMW21-01-EBT-17_20140805     | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 1.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-98       | MW-98_MW-98-LS-23_20160422              | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-EBT-11_20130207     | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMMW21-02   | PMMW21-02_PMMW21-02-EBT-15_20140206     | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluor_Methylene chloride, 75-09-2 | 1.46                 | 1           | PMMW21-01   | PMMW21-01_PMMW21-01-EBT-13_20130817     | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | JB        | 0.5                    |
|                                   |                      |             |             |                                         |             |               |                     |        |            |                    |         |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                       | ProUCL Result (ug/L) | ProUCL Flag | Location    | Sample ID                               | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC               | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------------------|----------------------|-------------|-------------|-----------------------------------------|-------------|---------------|----------------------|--------|------------|--------------------|---------|-----------|------------------------|
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW-101-06B | PMW101-06B, PMW101-06B-LS-21, 20150408  | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW21-03    | PMW21-03, PMW21-03-LS-17, 20130411      | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1                      |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-06B  | PMW101-06B, PMW101-06B-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-06B  | PMW101-06B, PMW101-06B-LS-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-94A      | MW-94A, MW-94A-LS-23, 20160421          | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-03A  | PMW101-03A, PMW101-03A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-07A  | PMW101-07A, PMW101-07A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-98       | MW-98, MW-98-LA-18, 20131011            | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-07A  | PMW101-07A, PMW101-07A-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW21-05    | PMW21-05, PMW21-05-LA-22, 20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-02B  | PMW101-02B, PMW101-02B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW101-06B  | PMW101-06B, PMW101-06B-LS-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | PMW21-03    | PMW21-03, PMW21-03-LS-15, 20120423      | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | MW-96       | MW-96, MW-96-LA-18, 20131011            | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | WI101-03A   | WI101-03A, WI101-03A-EBT-11, 20130207   | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-6       | DR1-6, DR1-6-EBT-15, 20140209           | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.5                  | 0           | DR1-5       | DR1-5, DR1-5-EBT-14, 20131109           | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.5                    |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | DR1-5A      | DR1-5A, DR1-5A-EBT-12, 20130511         | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | WI101-03A   | WI101-03A, WI101-03A-EBT-13, 20130816   | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | DR1-5       | DR1-5, DR1-5-EBT-18, 20141019           | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | DR1-5       | DR1-5, DR1-5-EBT-17, 20140806           | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5A      | DR1-5A, DR1-5A-EBT-15, 20140207         | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-12, 20130512   | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | DR1-6A      | DR1-6A, DR1-6A-EBT-14, 20141107         | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03B   | WI101-03B, WI101-03B-EBT-18, 20141107   | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03A   | WI101-03A, WI101-03A-EBT-16, 20140508   | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-4       | DR1-4, DR1-4-LA-22, 20151007            | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03A   | WI101-03A, WI101-03A-EBT-17, 20140808   | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 5                    | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-17, 20140808   | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 5                      |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03B   | WI101-03B, WI101-03B-EBT-15, 20140209   | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5A      | DR1-5A, DR1-5A-LS-25, 20170420          | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5A      | DR1-5A, DR1-5A-EBT-13, 20130816         | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5A      | DR1-5A, DR1-5A-LB-16, 20121020          | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-4       | DR1-4, DR1-4-LA-18, 20131012            | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5       | DR1-5, DR1-5-LS-25, 20170420            | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | DR1-5       | DR1-5, DR1-5-EBT-16, 20140508           | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | WI101-03C   | WI101-03C, WI101-03C-EBT-11, 20130208   | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | WI101-03C   | WI101-03C, WI101-03C-EBT-13, 20130816   | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03B   | WI101-03B, WI101-03B-EBT-12, 20130512   | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5       | DR1-5, DR1-5-EBT-13, 20130820           | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | WI101-03A   | WI101-03A, WI101-03A-EBT-11, 20140209   | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03B   | WI101-03B, WI101-03B-EBT-14, 20131110   | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-03B   | WI101-03B, WI101-03B-EBT-16, 20140508   | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-15, 20140208   | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | DR1-5       | DR1-5, DR1-5-EBT-12, 20130512           | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 6.25                 | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-18, 20141107   | 11/7/2014   | 11/7/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 6.25                   |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | WI101-03C   | WI101-03C, WI101-03C-EBT-12, 20130509   | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5A      | DR1-5A, DR1-5A-EBT-11, 20130206         | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-4       | DR1-4, DR1-4-LB-16, 20121018            | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | DR1-5       | DR1-5, DR1-5-LB-16, 20121020            | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5A      | DR1-5A, DR1-5A-EBT-13, 20130820         | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.5                  | 0           | DR1-5       | DR1-5, DR1-5-EBT-15, 20140207           | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | WI101-03A   | WI101-03A, WI101-03A-EBT-16, 20140508   | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 12.5                 | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-16, 20140509   | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 12.5                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-14, 20131109   | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | UJ        | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-6       | DR1-6, DR1-6-EBT-12, 20130512           | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-6       | DR1-6, DR1-6-LB-24, 20130815            | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-5       | DR1-5, DR1-5-LS-15, 20120422            | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | WI101-03B   | WI101-03B, WI101-03B-EBT-17, 20140809   | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-3       | DR1-3, DR1-3-LS-25, 20170421            | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | WI101-02C   | WI101-02C, WI101-02C-EBT-13, 20130815   | 8/15/2013   | 8/15/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 0.25                 | 0           | DR1-4       | DR1-4, DR1-4-LB-20, 20141019            | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 0.25                   |
| Fluval_Methylene chloride, 75-09-2 | 5                    | 0           | WI101-03C   | WI101-03C, WI101-03C-EBT-17, 20140809   | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 5                      |
| Fluval_Methylene chloride, 75-09-2 | 1.25                 | 0           | DR1-6       | DR1-6, DR1-6-EBT-13, 20130816           | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 1.25                   |
| Fluval_Methylene chloride, 75-09-2 | 2.5                  | 0           | DR1-5       | DR1-5, DR1-5-EBT-11, 20131109           | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride | 75-09-2 | U         | 2.5                    |
| Fluval_Methylene chloride, 75-09-2 | 6.25                 | 0           | WI101-03C   | WI101-03C, WI101-03C-EBT-16, 20140509   | 5/9/2014    | 5/9/2014      | 8260B                |        |            |                    |         |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                        | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                         | Sample Date | Analysis Date | Analytical Method  | T or D | COPC Group | COPC                    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-------------------------------------|----------------------|-------------|------------|-----------------------------------|-------------|---------------|--------------------|--------|------------|-------------------------|----------|-----------|------------------------|
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | W101-02B   | W101-02B_W101-02B-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR1-3      | DR1-3_DR1-3-L5-21_20150408        | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR2-5      | DR2-5_DR2-5-L5-15_20120420        | 4/20/2012   | 4/20/2012     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR2-6      | DR2-6_DR2-6-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR1-1      | DR1-1_DR1-1-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-04B   | W101-04B_W101-04B-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR1-4      | DR1-4_DR1-4-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR2-3      | DR2-3_DR2-3-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR2-1      | DR2-1_DR2-1-LA-22_20151006        | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | W101-04A   | W101-04A_W101-04A-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR1-6      | DR1-6_DR1-6-L5-25_20120420        | 4/20/2012   | 4/20/2012     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR2-5      | DR2-5_DR2-5-EBT-12_20130508       | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR2-3      | DR2-3_DR2-3-LB-24_20161017        | 10/17/2016  | 10/17/2016    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | W101-02B   | W101-02B_W101-02B-EBT-11_20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | DR1-6A     | DR1-6A_DR1-6A-EBT-13_20130813     | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-13_20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | PMW92-03   | PMW92-03_PMW92-03-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-19_20130204  | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-LB-24_20161015  | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-03   | PMW92-03_PMW92-03-EBT-13_20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-16_20140612 | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | PMW92-03   | PMW92-03_PMW92-03-EBT-14_20131106 | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 19.6                 | 1           | PMW92-03   | PMW92-03_PMW92-03-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | PMW85-01   | PMW85-01_PMW85-01-EBT-13_20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-LB-21_20140612  | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-06   | PMW92-06_PMW92-06-L5-15_20140421  | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW21-05   | PMW21-05_PMW21-05-L5-21_20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-03   | PMW92-03_PMW92-03-L5-15_20140421  | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-19_20130204  | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-L5-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1                    | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 1                      |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-23_20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-L5-21_20140409  | 4/10/2014   | 4/10/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-03   | PMW92-03_PMW92-03-LB-16_20161012  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-LB-24_20161015  | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-L5-16_20140612  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-L5-15_20140421  | 21/02/2014  | 21/02/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 31.1                 | 1           | PMW92-03   | PMW92-03_PMW92-03-EBT-16_20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | J         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW21-05   | PMW21-05_PMW21-05-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-19_20130204  | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 5                    | 0           | PMW92-03   | PMW92-03_PMW92-03-EBT-15_20140211 | 21/11/2014  | 21/11/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-L5-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW21-05   | PMW21-05_PMW21-05-L5-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-LB-21_20140612  | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 1.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-EBT-14_20131106 | 11/5/2013   | 11/5/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 1.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-LB-24_20131106  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-03   | PMW92-03_PMW92-03-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-EBT-12_20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-03   | PMW92-03_PMW92-03-LB-21_20140612  | 2/9/2012    | 2/9/2012      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 65.6                 | 1           | PMW92-03   | PMW92-03_PMW92-03-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | J         | 5                      |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-01   | PMW85-01_PMW85-01-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-14_20131106 | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW92-02   | PMW92-02_PMW92-02-L5-21_20140409  | 4/10/2014   | 4/10/2014     | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Methylene chloride_75-09-2 | 2.5                  | 0           | PMW85-01   | PMW85-01_PMW85-01-EBT-15_20140210 | 21/02/2014  | 21/02/2014    | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 2.5                    |
| Fluoride_Methylene chloride_75-09-2 | 0.25                 | 0           | PMW85-05   | PMW85-05_PMW85-05-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C50 | T      | VOC        | Methylene chloride      | 75-09-2  | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.434                | 1           | W101-07A   | W101-07A_W101-07A-EBT-14_20131109 | 11/19/2013  | 11/19/2013    | 8260B5030B/5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-07C   | W101-07C_W101-07C-EBT-13_20130816 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluoride_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-07C   | W101-07C_W101-07C-EBT-14_20131109 | 11/17/2013  | 11/17/2013    | 8260B5030B/5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluoride_Tetrachloroethene_127-18-4 | 9.93                 | 1           | W101-01A</ |                                   |             |               |                    |        |            |                         |          |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                      | ProUCL Result (ug/L) | ProUCL Flag | Location   | Sample ID                           | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|------------|-------------------------------------|-------------|---------------|---------------------|--------|------------|-------------------------|----------|-----------|------------------------|
| Fluval_Tetrachloroethene_127-18-4 | 1.04                 | 1           | W101-05B   | W101-05B_W101-05B-EBT-16_20140509   | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-04B   | W121-04B_W121-04B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | W121-03A   | W121-03A_W121-03A-EBT-17_20140806   | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-01A   | W121-01A_W121-01A-EBT-17_20140804   | 8/4/2014    | 8/4/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 66.5                 | 1           | MW-100B    | MW-100B_MW-100B-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.302                | 1           | W121-03A   | W121-03A_W121-03A-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 36.2                 | 1           | W101-101T  | MW-101T_W101-101T-LA-22_20150107    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-04B   | W121-04B_W121-04B-EBT-17_20140806   | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-01A   | W121-01A_W121-01A-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.731                | 1           | W101-05B   | W101-05B_W101-05B-EBT-17_20140808   | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | W121-04B   | W121-04B_W121-04B-EBT-16_20141110   | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W121-02    | W121-02_W121-02-EBT-17_20140812     | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.751                | 1           | MW-101T    | MW-101T_MW-101T-LS-19_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-01A   | W121-01A_W121-01A-EBT-18_20141111   | 11/11/2014  | 11/11/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | W121-04B   | W121-04B_W121-04B-EBT-16_20141110   | 11/10/2014  | 11/10/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 4.69                 | 1           | W101-05A   | W101-05A_W101-05A-EBT-13_20130817   | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.41                 | 1           | W101-05A   | W101-05A_W101-05A-EBT-14_20131110   | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5                    | 0           | W121-04B   | W121-04B_W121-04B-EBT-18_20141106   | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 5                      |
| Fluval_Tetrachloroethene_127-18-4 | 33                   | 1           | MW-100B    | MW-100B_MW-100B-LB-16_20130411      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-104     | MW-104_MW-104-LA-18_2013011107      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W121-01B   | W121-01B_W121-01B-EBT-11_20130211   | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 4.62                 | 1           | W121-01B   | W121-01B_W121-01B-EBT-11_20130205   | 2/5/2013    | 2/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-05A   | W101-05A_W101-05A-EBT-12_20130513   | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 5.54                 | 1           | W121-01A   | W121-01A_W121-01A-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 5                    | 0           | W121-02    | W121-02_W121-02-EBT-16_20140512     | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 5                      |
| Fluval_Tetrachloroethene_127-18-4 | 6.25                 | 0           | W121-02    | W121-02_W121-02-EBT-16_20140512     | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 6.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 3.59                 | 1           | MW-101B    | MW-101B_MW-101B-LS-19_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-01B   | W121-01B_W121-01B-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 9.48                 | 1           | MW-101B    | MW-101B_MW-101B-LB-20_20140210      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W121-01B   | W121-01B_W121-01B-EBT-14_20131107   | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.31                 | 1           | W121-03A   | W121-03A_W121-03A-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | W101-05B   | W101-05B_W101-05B-EBT-18_20140804   | 8/4/2014    | 8/4/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-04A   | W121-04A_W121-04A-EBT-17_20140806   | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.351                | 1           | W121-01B   | W121-01B_W121-01B-EBT-17_20140804   | 8/4/2014    | 8/4/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | W121-01B   | W121-01B_W121-01B-EBT-17_20140804   | 8/4/2014    | 8/4/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 6.25                 | 0           | W121-04B   | W121-04B_W121-04B-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 6.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.1                  | 1           | W121-02    | W121-02_W121-02-EBT-17_20140812     | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.1                    |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W121-03    | W121-03_W121-03-EBT-11_20130209     | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 5                    | 0           | W121-04A   | W121-04A_W121-04A-EBT-18_20141106   | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 5                      |
| Fluval_Tetrachloroethene_127-18-4 | 5.21                 | 1           | MW-101B    | MW-101B_MW-101B-LS-21_20150408      | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-05A   | W101-05A_W101-05A-EBT-18_20141109   | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W121-04B   | W121-04B_W121-04B-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | W121-01B   | W121-01B_W121-01B-EBT-13_20130818   | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.77                 | 1           | W121-03A   | W121-03A_W121-03A-EBT-13_20130819   | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 11.3                 | 1           | MW-121-01B | MW-121-01B_W121-01B-EBT-14_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.95                 | 1           | W101-05B   | W101-05B_W101-05B-EBT-15_20140208   | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.22                 | 1           | MW-101T    | MW-101T_MW-101T-LA-18_20130112      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 6.25                 | 0           | W121-04B   | W121-04B_W121-04B-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 6.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 4.32                 | 1           | W101-04C   | W101-04C_W101-04C-EBT-15_20140208   | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 4.32                   |
| Fluval_Tetrachloroethene_127-18-4 | 5                    | 0           | W121-01B   | W121-01B_W121-01B-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 5                      |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W121-02    | W121-02_W121-02-EBT-13_20130814     | 8/14/2013   | 8/14/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.75                 | 0           | W121-03A   | W121-03A_W121-03A-EBT-14_20130819   | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.75                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-103     | MW-103_MW-103-LB-24_20160115        | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5                    | 0           | W121-03B   | W121-03B_W121-03B-EBT-11_20130207   | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 5                      |
| Fluval_Tetrachloroethene_127-18-4 | 0.38                 | 1           | MW-143     | MW-143_MW-143-LB-19_20140426        | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.428                | 0           | MW-113     | MW-113_MW-113-EBT-12_20130208       | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.428                  |
| Fluval_Tetrachloroethene_127-18-4 | 54.7                 | 1           | MW-113     | MW-113_MW-113-EBT-11_20130208       | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 11.3                 | 1           | MW-113     | MW-113_MW-113-EBT-14_20131106       | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 5.69                 | 1           | MW-113     | MW-113_MW-113-EBT-15_20140210       | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 19.1                 | 1           | MW-197B    | MW-197B_MW-197B-EBT-13_20130819     | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 23.8                 | 1           | MW-205B    | MW-205B_MW-205B-LS-17_20130107      | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 3.59                 | 1           | MW-113     | MW-113_MW-113-EBT-17_20140811       | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           |                        |

TABLE B.4  
PROJULS.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                      | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|---------------------|--------|------------|-------------------------|----------|-----------|------------------------|
| Fluval_Tetrachloroethene_127-18-4 | 18.9                 | 1           | MW-218   | MW-218_MW-218-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-213   | MW-213_MW-213-L5-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.11                 | 1           | MW-21    | MW-21_MW-21-EBT-17_20141006    | 11/6/2011   | 11/6/2011     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-15_20140211  | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.415                | 1           | MW-212   | MW-212_MW-212-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 80.1                 | 1           | MW-219   | MW-219_MW-219-L5-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 74.7                 | 1           | MW-219   | MW-219_MW-219-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 4.8                  | 1           | MW-2108  | MW-2108_MW-2108-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-213   | MW-213_MW-213-LB-16_20121022   | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 20.3                 | 1           | MW-218   | MW-218_MW-218-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 121                  | 1           | MW-21    | MW-21_MW-21-LB-16_20121020     | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.97                 | 1           | MW-21    | MW-21_MW-21-EBT-17_20140805    | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 16.8                 | 1           | MW-218   | MW-218_MW-218-LA-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 81.4                 | 1           | MW-219   | MW-219_MW-219-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 13.3                 | 1           | MW-21    | MW-21_MW-21-EBT-12_20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 19.1                 | 1           | MW-21    | MW-21_MW-21-EBT-13_20130823    | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 73.8                 | 1           | MW-219   | MW-219_MW-219-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 11.3                 | 1           | MW-21    | MW-21_MW-21-EBT-16_20140507    | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-22    | MW-22_MW-22-LB-24_20161014     | 10/16/2016  | 10/16/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 25.2                 | 1           | MW-219   | MW-219_MW-219-LB-16_20131014   | 10/19/2013  | 10/19/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.91                 | 1           | MW-2158  | MW-2158_MW-2158-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.263                | 1           | MW-212   | MW-212_MW-212-EBT-16_20140510  | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 66.6                 | 1           | MW-219   | MW-219_MW-219-L5-19_20140426   | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.67                 | 1           | MW-2108  | MW-2108_MW-2108-LB-24_20161049 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.89                 | 1           | MW-21    | MW-21_MW-21-EBT-14_20131108    | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-22    | MW-22_MW-22-LB-20_20141018     | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.93                 | 1           | MW-2158  | MW-2158_MW-2158-LB-20_20141021 | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-213   | MW-213_MW-213-LB-16_20131014   | 10/13/2013  | 10/13/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | MW-213   | MW-213_MW-213-LB-24_20161017   | 10/17/2016  | 10/17/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 26.8                 | 1           | MW-217   | MW-217_MW-217-L5-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 11.5                 | 1           | MW-2078  | MW-2078_MW-2078-L5-17_20130411 | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-213   | MW-213_MW-213-EBT-13_20130823  | 8/23/2013   | 8/23/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 46.2                 | 1           | MW-2078  | MW-2078_MW-2078-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 3.37                 | 1           | MW-2108  | MW-2108_MW-2108-L5-19_20140426 | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 85                   | 1           | MW-2078  | MW-2078_MW-2078-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.7                  | 1           | MW-2108  | MW-2108_MW-2108-L5-25_20170419 | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 15.2                 | 1           | MW-2068  | MW-2068_MW-2068-L5-25_20170420 | 4/20/2016   | 4/20/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 87.8                 | 1           | MW-2078  | MW-2078_MW-2078-L5-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 80.5                 | 1           | MW-219   | MW-219_MW-219-LB-24_20161016   | 10/16/2016  | 10/16/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 28.9                 | 1           | MW-217   | MW-217_MW-217-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-L5-15_20140510   | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 15.9                 | 1           | MW-218   | MW-218_MW-218-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 65.3                 | 1           | MW-2078  | MW-2078_MW-2078-L5-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 17.9                 | 1           | MW-217   | MW-217_MW-217-L5-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-16_20131014   | 10/14/2013  | 10/14/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 23.3                 | 1           | MW-217   | MW-217_MW-217-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.48                 | 1           | MW-212   | MW-212_MW-212-L5-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 15.6                 | 1           | MW-2068  | MW-2068_MW-2068-L5-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.77                 | 1           | MW-217   | MW-217_MW-217-LA-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.6                 | 1           | MW-2068  | MW-2068_MW-2068-L5-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.43                 | 1           | MW-2108  | MW-2108_MW-2108-L5-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.88                 | 1           | MW-216   | MW-216_MW-216-L5-25_20170420   | 4/20/2016   | 4/20/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 18.1                 | 1           | MW-218   | MW-218_MW-218-L5-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 15.4                 | 1           | MW-218   | MW-218_MW-218-L5-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 20.2                 | 1           | MW-2068  | MW-2068_MW-2068-L5-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 124                  | 1           | MW-2078  | MW-2078_MW-2078-L5-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.47                 | 1           | MW-2108  | MW-2108_MW-2108-L5-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 93.3                 | 1           | MW-2078  | MW-2078_MW-2078-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 29.6                 | 1           | MW-217   | MW-217_MW-217-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-L5-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-213   | MW-213_MW-213-EBT-17_20140511  | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 11.8                 | 1           | MW-2078  | MW-2078_MW-2078-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloro                |                      |             |          |                                |             |               |                     |        |            |                         |          |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJUL Group                        | ProJUL Result (µg/L) | ProJUL Flag | Location | Sample ID                    | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                    | CASRN    | Qualifier | Detection Limit (µg/L) |
|-------------------------------------|----------------------|-------------|----------|------------------------------|-------------|---------------|----------------------|--------|------------|-------------------------|----------|-----------|------------------------|
| Fluoride_Tetrachloroethene_127-18-4 | 6.62                 | 1           | MW-85    | MW-85_MW-85-EBT-13_20130814  | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 34.5                 | 1           | MW-88    | MW-88_MW-88-L5-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 2.5                  | 0           | MW-62    | MW-62_MW-62-L17_20140810     | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 26.6                 | 1           | MW-258   | MW-258_MW-258-LB-24_20161015 | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 17.5                 | 1           | MW-26    | MW-26_MW-26-L5-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 1.75                 | 1           | MW-39    | MW-39_MW-39-L5-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 18.3                 | 1           | MW-45    | MW-45_MW-45-L5-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 11.3                 | 1           | MW-39    | MW-39_MW-39-L5-23_20150409   | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 10.9                 | 1           | MW-265   | MW-265_MW-265-L5-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 30.8                 | 1           | MW-258   | MW-258_MW-258-L5-23_20150410 | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 2.31                 | 1           | MW-39    | MW-39_MW-39-L5-25_20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 13.7                 | 1           | MW-265   | MW-265_MW-265-LB-24_20161015 | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 15.1                 | 1           | MW-259   | MW-259_MW-259-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 10.6                 | 1           | MW-26    | MW-26_MW-26-L5-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 40.3                 | 1           | MW-269   | MW-269_MW-269_20150737       | 7/31/2015   | 7/31/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.008                | 1           | MW-260   | MW-260_MW-260-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-62    | MW-62_MW-62-L5-25_20170421   | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 10.7                 | 1           | MW-39    | MW-39_MW-39-L5-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 1.25                 | 0           | MW-62    | MW-62_MW-62-EBT-15_20140221  | 2/11/2014   | 2/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 33.6                 | 1           | MW-64    | MW-269_MW-269-LA-22_20141028 | 10/28/2014  | 10/28/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 9.78                 | 1           | MW-39    | MW-39_MW-39-L5-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-62    | MW-62_MW-62-EBT-14_20131111  | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 9.54                 | 1           | MW-265   | MW-265_MW-265-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 5.59                 | 1           | MW-263   | MW-263_MW-263-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 38.9                 | 1           | MW-269   | MW-269_MW-269-LB-24_20161015 | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-260   | MW-260_MW-260-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 3.22                 | 1           | MW-39    | MW-39_MW-39-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 18                   | 1           | MW-64    | MW-64_MW-64-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 10.1                 | 1           | MW-39    | MW-39_MW-39-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 56.6                 | 1           | MW-269   | MW-269_MW-269-L5-23_20160423 | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 2.52                 | 1           | MW-63A   | MW-63A_MW-63A-LA-18_20131012 | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 9.7                  | 1           | MW-39    | MW-39_MW-39-L5-23_20140423   | 4/23/2014   | 4/23/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 42.7                 | 1           | MW-88    | MW-88_MW-88-LA-22_20151006   | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 14.3                 | 1           | MW-265   | MW-265_MW-265-L5-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 16.9                 | 1           | MW-64    | MW-64_MW-64-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 13.7                 | 1           | MW-259   | MW-259_MW-259-L5-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 20.9                 | 1           | MW-64    | MW-64_MW-64-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 71.4                 | 1           | MW-85    | MW-85_MW-85-L5-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 29.9                 | 1           | MW-258   | MW-258_MW-258-L5-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.278                | 1           | MW-261   | MW-261_MW-261-L5-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 29.1                 | 1           | MW-26    | MW-26_MW-26-L5-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-62    | MW-62_MW-62-L5-23_20160425   | 4/25/2016   | 4/25/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.665                | 1           | MW-50    | MW-50_MW-50-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.985                | 1           | MW-50    | MW-50_MW-50-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 14.6                 | 1           | MW-64    | MW-64_MW-64-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 32.2                 | 1           | MW-258   | MW-258_MW-258-LA-18_20131012 | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 15.1                 | 1           | MW-259   | MW-259_MW-259-L5-15_20120422 | 4/22/2012   | 4/22/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 24.6                 | 1           | MW-26    | MW-26_MW-26-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 21.9                 | 1           | MW-64    | MW-64_MW-64-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 7.16                 | 1           | MW-52    | MW-52_MW-52-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 45.2                 | 1           | MW-88    | MW-88_MW-88-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 40.5                 | 1           | MW-98    | MW-98_MW-98-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 19.2                 | 1           | MW-98    | MW-98_MW-98-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 65.4                 | 1           | MW-92    | MW-92_MW-92-L5-23_20160420   | 4/20/2016   | 4/20/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-97    | MW-97_MW-97-L5-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 59.1                 | 1           | MW-92    | MW-92_MW-92-L5-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 30.1                 | 1           | MW-94A   | MW-94A_MW-94A-L5-17_20130410 | 4/10/2014   | 4/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 32.1                 | 1           | MW-94A   | MW-94A_MW-94A-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 32.2                 | 1           | MW-98    | MW-98_MW-98-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-97    | MW-97_MW-97-L5-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 30.8                 | 1           | MW-94A   | MW-94A_MW-94A-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 109                  | 1           | MW-92    | MW-92_MW-92-L5-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 36.6                 | 1           | MW-98    | MW-98_MW-98-L5-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 |           | 0.25                   |
| Fluoride_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-97    | MW-97_MW-97-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/   |        |            |                         |          |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJUL Group                      | ProJUL Result (ug/L) | ProJUL Flag | Location   | Sample ID                                | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|------------|------------------------------------------|-------------|---------------|---------------------|--------|------------|-------------------------|----------|-----------|------------------------|
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 1           | PMW21-05   | PMW21-05, PMW21-05-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-12_20130513   | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 53.7                 | 1           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 142                  | 1           | PMW21-04   | PMW21-04, PMW21-04-L5-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 26.1                 | 1           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-18_20141108   | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 293                  | 1           | PMW21-04   | PMW21-04, PMW21-04-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-17_20140808   | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 29.6                 | 1           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 16.9                 | 1           | PMW101-04A | PMW101-04A, PMW101-04A-L5-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 83.5                 | 1           | PMW21-03   | PMW21-03, PMW21-03-L5-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 110                  | 1           | PMW21-03   | PMW21-03, PMW21-03-LA-22_20150407        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 13.1                 | 1           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-12_20161014   | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 98.2                 | 1           | PMW21-03   | PMW21-03, PMW21-03-L5-21_20150408        | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 3.63                 | 1           | PMW101-02A | PMW101-02A, PMW101-02A-L5-25-RE_20170424 | 4/24/2017   | 4/24/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 112                  | 1           | PMW21-03   | PMW21-03, PMW21-03-L5-17_20130411        | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.84                 | 1           | PMW101-06A | PMW101-06A, PMW101-06A-EBT-12_20161014   | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 11.3                 | 1           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-11_20130206   | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 44.1                 | 1           | PMW101-06A | PMW101-06A, PMW101-06A-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-13_20130816   | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-12_20130513   | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 115                  | 1           | PMW21-03   | PMW21-03, PMW21-03-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.29                 | 1           | PMW101-06A | PMW101-06A, PMW101-06A-L5-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 107                  | 1           | PMW21-03   | PMW21-03, PMW21-03-L5-23_20160423        | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.58                 | 1           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-14_20131109   | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 103                  | 1           | PMW21-03   | PMW21-03, PMW21-03-L5-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.85                 | 1           | PMW101-02A | PMW101-02A, PMW101-02A-L5-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 53.4                 | 1           | PMW101-04A | PMW101-04A, PMW101-04A-L5-15_20120422    | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 130                  | 1           | PMW21-03   | PMW21-03, PMW21-03-LB-19_20120105        | 4/26/2012   | 4/26/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 88.8                 | 1           | PMW21-03   | PMW21-03, PMW21-03-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.49                 | 1           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-18_20141108   | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 150                  | 1           | PMW21-02   | PMW21-02, PMW21-02-L5-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.28                 | 1           | PMW101-06A | PMW101-06A, PMW101-06A-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 87.3                 | 1           | PMW21-03   | PMW21-03, PMW21-03-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.54                 | 1           | PMW101-06A | PMW101-06A, PMW101-06A-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 104                  | 1           | PMW21-03   | PMW21-03, PMW21-03-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | PMW101-02A | PMW101-02A, PMW101-02A-L5-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 96.5                 | 1           | DR1-5      | DR1-5, DR1-5-EBT-11_20130206             | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1                    | 0           | IW101-03A  | IW101-03A, IW101-03A-EBT-17_20140808     | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 103                  | 1           | DR2-5      | DR2-5, DR2-5-L5-15_20120420              | 4/20/2012   | 4/20/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 179                  | 1           | DR2-1      | DR2-1, DR2-1-L5-19_20140424              | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 230                  | 1           | DR2-4      | DR2-4, DR2-4-L5-21_20150410              | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 4.06                 | 1           | DR1-5      | DR1-5, DR1-5-L5-25_20170420              | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 33.3                 | 1           | DR2-2      | DR2-2, DR2-2-EBT-11_20130209             | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.649                | 1           | DR1-5A     | DR1-5A, DR1-5A-EBT-13_20130820           | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | IW101-04B  | IW101-04B, IW101-04B-EBT-15_20140208     | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | IW101-04B  | IW101-04B, IW101-04B-EBT-14_20131111     | 11/11/2013  | 11/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 122                  | 1           | DR2-1      | DR2-1, DR2-1-L5-15_20120423              | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 201                  | 1           | DR2-1      | DR2-1, DR2-1-L5-23_20160421              | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 158                  | 1           | DR2-1      | DR2-1, DR2-1-L5-25_20170418              | 4/18/2017   | 4/18/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.418                | 1           | DR1-1A     | DR1-1A, DR1-1A-LB-20_20141018            | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | DR1-5A     | DR1-5A, DR1-5A-EBT-12_20130511           | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 206                  | 1           | IW101-03C  | IW101-03C, IW101-03C-EBT-11_20130208     | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 183                  | 1           | DR2-1      | DR2-1, DR2-1-L5-17_20130410              | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 99.9                 | 1           | DR2-5      | DR2-5, DR2-5-LB-16_20121019              | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 7.97                 | 1           | DR2-5      | DR2-5, DR2-5-LB-24_20161017              | 10/17/2016  | 10/17/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.5                  | 0           | IW101-03A  | IW101-03A, IW101-03A-EBT-18_20141107     | 4/17/2014   | 4/17/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.908                | 1           | DR1-1A     | DR1-1A, DR1-1A-LB-24_20161013            | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | IW101-03C  | IW101-03C, IW101-03C-EBT-12_20130509     | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | DR2-5      | DR2-5, DR2-5-L5-25_20170422              | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 25                   | 0           | DR2-5      | DR2-5, DR2-5-L5-23_20160421              | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 25                     |
| Fluval_Tetrachloroethene_127-18-4 | 11                   | 1           | DR2-4      | DR2-4, DR2-4-LB-16_20121021              | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.4                  | 1           | IW101-03B  | IW101-03B, IW101-03B-EBT-17_20140809     | 8/9/2014    | 8/9/2014      | 8260B503            |        |            |                         |          |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                      | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|-------------------|--------|------------|-------------------------|----------|-----------|------------------------|
| Fluval_Tetrachloroethene_127-18-4 | 6.25                 | 0           | W101-04A | W101-04A_W101-04A-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 6.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20141107     | 11/7/2014   | 11/7/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | DR2-6    | DR2-6_DR2-6-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.6                  | 1           | DR1-7    | DR1-7_DR1-7-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.385                | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-15_20140207     | 2/7/2014    | 2/7/2014      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-04B | W101-04B_W101-04B-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 235                  | 1           | DR2-1    | DR2-1_DR2-1-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 25.2                 | 1           | DR2-6    | DR2-6_DR2-6-L5-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-02C | W101-02C_W101-02C-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.511                | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20140508     | 5/8/2014    | 5/8/2014      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.947                | 1           | DR1-2    | DR1-2_DR1-2-LB-20_20141107        | 10/18/2014  | 10/18/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 221                  | 1           | DR2-1    | DR2-1_DR2-1-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 1           | DR1-4    | DR1-4_DR1-4-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 1.57                 | 1           | DR1-7    | DR1-7_DR1-7-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 4.44                 | 1           | DR2-6    | DR2-6_DR2-6-L5-23_20160422        | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 8.38                 | 1           | DR2-6    | DR2-6_DR2-6-L5-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | W101-03C | W101-03C_W101-03C-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | UJ        | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.948                | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-14_20131011     | 11/9/2013   | 11/9/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W101-03C | W101-03C_W101-03C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 12.5                 | 0           | W101-04A | W101-04A_W101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 12.5                   |
| Fluval_Tetrachloroethene_127-18-4 | 49.7                 | 1           | DR1-5A   | DR1-5A_DR1-5A-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 10.3                 | 1           | DR2-6    | DR2-6_DR2-6-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.23                 | 1           | DR1-7    | DR1-7_DR1-7-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.08                 | 1           | DR2-6    | DR2-6_DR2-6-L5-21_20150411        | 4/11/2015   | 4/11/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 3.54                 | 1           | W101-03A | W101-03A_W101-03A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.53                 | 1           | DR1-3    | DR1-3_DR1-3-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.19                 | 1           | DR1-7    | DR1-7_DR1-7-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 180                  | 1           | DR2-1    | DR2-1_DR2-1-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.951                | 1           | DR1-2    | DR1-2_DR1-2-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.25                 | 0           | DR2-6    | DR2-6_DR2-6-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 46.1                 | 1           | DR1-5A   | DR1-5A_DR1-5A-L5-16_20121022      | 4/22/2012   | 4/22/2012     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.476                | 1           | PMW85-01 | PMW85-01_PMW85-01-EBT-16_20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 32                   | 1           | PMW21-05 | PMW21-05_PMW21-05-L5-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.25                 | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-14_20131105 | 11/5/2013   | 11/5/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-17_20140811 | 8/13/2013   | 8/13/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 1.03                 | 1           | PMW85-01 | PMW85-01_PMW85-01-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 27.7                 | 1           | PMW21-05 | PMW21-05_PMW21-05-L5-21_20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 16.2                 | 1           | PMW21-05 | PMW21-05_PMW21-05-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 2.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.854                | 1           | PMW85-01 | PMW85-01_PMW85-01-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.451                | 1           | PMW85-01 | PMW85-01_PMW85-01-EBT-12_20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.411                | 1           | PMW85-01 | PMW85-01_PMW85-01-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.327                | 1           | PMW92-03 | PMW92-03_PMW92-03-EBT-17_20140811 | 4/11/2013   | 4/11/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 125                  | 1           | PMW92-03 | PMW92-03_PMW92-03-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5.01                 | 1           | PMW92-03 | PMW92-03_PMW92-03-EBT-16_20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 2.5                    |
| Fluval_Tetrachloroethene_127-18-4 | 0.67                 | 1           | PMW92-02 | PMW92-02_PMW92-02-L5-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 28                   | 1           | PMW92-02 | PMW92-02_PMW92-02-L5-24_20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 9.11                 | 1           | PMW92-03 | PMW92-03_PMW92-03-EBT-15_20140211 | 2/11/2014   | 2/11/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 1.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 110                  | 1           | PMW85-05 | PMW85-05_PMW85-05-EBT-13_20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 70.1                 | 1           | PMW85-05 | PMW85-05_PMW85-05-LB-16_20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 13.3                 | 1           | PMW92-03 | PMW92-03_PMW92-03-EBT-14_20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 5                    | 0           | PMW92-03 | PMW92-03_PMW92-03-EBT-17_20140811 | 8/11/2014   | 8/11/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 5                      |
| Fluval_Tetrachloroethene_127-18-4 | 122                  | 1           | PMW85-05 | PMW85-05_PMW85-05-EBT-18_20141110 | 11/10/2014  | 11/10/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 106                  | 1           | PMW85-05 | PMW85-05_PMW85-05-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 154                  | 1           | PMW92-03 | PMW92-03_PMW92-03-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 97.5                 | 1           | PMW85-05 | PMW85-05_PMW85-05-EBT-14_20131106 | 11/6/2013   | 11/6/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | U         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.609                | 1           | PMW92-02 | PMW92-02_PMW92-02-L5-19_20140424  | 4/24/2014   | 4/24/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE) | 127-18-4 | J         | 0.25                   |
| Fluval_Tetrachloroethene_127-18-4 | 0.422                | 1           | PMW92-02 | PMW92-02_PMW92-02-L5-25_20170419  | 4/19/2017   | 4/19/2017     |                   |        |            |                         |          |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-TOXIC AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group             | ProCUL Result (µg/L) | ProCUL Flag | Location   | Sample ID                            | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN    | Qualifier | Detection Limit (µg/L) |
|--------------------------|----------------------|-------------|------------|--------------------------------------|-------------|---------------|---------------------|--------|------------|---------|----------|-----------|------------------------|
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-104     | MW-104_MW104-LA-22_20151006          | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | MW-101-05B | MW-101-05B_WW101-05B-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 1.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-01A   | W121-01A_WW121-01A-EBT-14_20131107   | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W121-01A   | W121-01A_WW121-01A-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 12.5                 | 0           | W121-03    | W121-03_WW121-03-EBT-11_20130209     | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 12.5                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W121-01A   | W121-01A_WW121-01A-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 2.5                    |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-01B   | W121-01B_WW121-01B-EBT-13_20130818   | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02A   | W121-02A_WW121-02A-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.285                | 1           | MW-101B    | MW-101B_MW101B-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-103     | MW-103_MW-103-LB-24_20161015         | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 12.5                 | 0           | W121-02    | W121-02_WW121-02-EBT-12_20130814     | 8/14/2013   | 8/14/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 12.5                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W101-05C   | W101-05C_WW101-05C-EBT-11_20130513   | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W121-01B   | W121-01B_WW121-01B-EBT-15_20140206   | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W101-05B   | W101-05B_WW101-05B-EBT-15_20140208   | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 12.5                 | 0           | W121-02    | W121-02_WW121-02-EBT-17_20140812     | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 12.5                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-01B   | W121-01B_WW121-01B-EBT-14_20131107   | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.844                | 1           | W121-02A   | W121-02A_WW121-02A-EBT-18_20141106   | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.5                    |
| Fluvial_Toluene_108-88-3 | 5                    | 0           | W121-02    | W121-02_WW121-02-EBT-16_20140512     | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 5                      |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W101-05B   | W101-05B_WW101-05B-EBT-16_20140509   | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-01B   | W121-01B_WW121-01B-EBT-18_20130510   | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-104     | MW-104_MW-104-LA-18_20131012         | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-104     | MW-104_MW-104-LB-16_20121021         | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 5                    | 0           | W121-08    | W121-08_WW121-08-EBT-16_20140512     | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 5                      |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-101B    | MW-101B_MW101B-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W121-01A   | W121-01A_WW121-01A-EBT-11_20130205   | 2/5/2013    | 2/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 3.6                  | 1           | W121-01    | W121-01_WW121-01-EBT-14_20131106     | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-100B    | MW-100B_MW-100B-LB-16_20121019       | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02B   | W121-02B_WW121-02B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-104     | MW-104_MW-104-LB-24_20161015         | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.54                 | 1           | W101-05A   | W101-05A_WW101-05A-EBT-17_20140808   | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-101B    | MW-101B_MW-101B-LS-19_20140426       | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-03A   | W121-03A_WW121-03A-EBT-13_20130819   | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-08    | W121-08_WW121-08-EBT-12_20130509     | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02B   | W121-02B_WW121-02B-EBT-16_20140507   | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 1.25                   |
| Fluvial_Toluene_108-88-3 | 2.77                 | 1           | MW-100B    | MW-100B_MW-100B-LB-24_20161013       | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 5                    | 0           | W121-07    | W121-07_WW121-07-EBT-11_20130210     | 2/10/2013   | 2/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 5                      |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02B   | W121-02B_WW121-02B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.448                | 1           | W101-07B   | W101-07B_WW101-07B-EBT-17_20140807   | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-01    | W121-01_WW121-01-EBT-11_20130209     | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W101-07C   | W101-07C_WW101-07C-EBT-12_20130509   | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 5                    | 0           | W121-07    | W121-07_WW121-07-EBT-12_20130509     | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 5                      |
| Fluvial_Toluene_108-88-3 | 5                    | 0           | W101-05C   | W101-05C_WW101-05C-EBT-16_20140509   | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 5                      |
| Fluvial_Toluene_108-88-3 | 2.27                 | 1           | MW-100B    | MW-100B_MW100B-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-101T    | MW-101T_MW-101T-LS-23_20160422       | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02B   | W121-02B_WW121-02B-EBT-18_20131105   | 11/5/2013   | 11/5/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W101-05A   | W101-05A_WW101-05A-EBT-16_20140509   | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-03A   | W121-03A_WW121-03A-EBT-11_20130206   | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.255                | 1           | W121-01    | W121-01_WW121-01-EBT-12_20130511     | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-03A   | W121-03A_WW121-03A-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-103     | MW-103_MW103-LA-22_20151007          | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-08    | W121-08_WW121-08-EBT-18_20141106     | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 12.5                 | 0           | W121-02    | W121-02_WW121-02-EBT-18_20140512     | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 12.5                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W101-07C   | W101-07C_WW101-07C-EBT-11_20130207   | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02B   | W121-02B_WW121-02B-EBT-12_20130510   | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-02B   | W121-02B_WW121-02B-EBT-13_20130817   | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 1                    | 0           | MW-101B    | MW-101B_MW-101B-LS-17_20130411       | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1                      |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W121-01    | W121-01_WW121-01-EBT-15_20130820     | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-01    | W121-01_WW121-01-EBT-13_20130820     | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-101B    | MW-101B_MW-101B-LA-18_20131012       | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W101-05C   | W101-05C_WW101-05C-EBT-15_20140208   | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-07    | W121-07_WW121-07-EBT-13_20130815     | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W101-07C   | W101-07C_WW101-07C-EBT-13_20130816   | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W121-03A   | W121-03A_WW121-03A-EBT-16_20140508   | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 1.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | W101-05B   | W101-05B_WW101-05B-EBT-11_20130208   | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 2.5                  | 0           | W121-03    | W121-03_WW121-03-EBT-18_20141106     | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluvial_Toluene_108-88-3 | 1.25                 | 0           | W121-08    | W121-08_WW121-08-EBT-18_20141106     | 11/6/2014   | 11/6/2        |                     |        |            |         |          |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJUL Group            | ProJUL Result (µg/L) | ProJUL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN    | Qualifier | Detection Limit (µg/L) |
|-------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|---------------------|--------|------------|---------|----------|-----------|------------------------|
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LS-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-210B  | MW-210B_MW-210B-LB-20_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-210B  | MW-210B_MW-210B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LS-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-11_20130207    | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-23_20160421 | 4/11/2016   | 4/11/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LS-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LA-18_20131012 | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LB-18_20131012 | 10/8/2013   | 10/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LA-18_20131011 | 4/9/2013    | 4/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LS-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-22    | MW-22_MW-22-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | MW-21    | MW-21_MW-21-EBT-17_20140305    | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-18_20141106    | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LS-25_20170422   | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-22    | MW-22_MW-22-LB-20_20141018     | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LB-16_20121019     | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-14_20131108    | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 25.4                 | 1           | MW-21    | MW-21_MW-21-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LS-19_20140426   | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LS-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 24.6                 | 1           | MW-21    | MW-21_MW-21-LS-23RE_20160523   | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 6.53                 | 1           | MW-21    | MW-21_MW-21-LS-25_20170420     | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LA-18_20131011 | 4/23/2013   | 4/23/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-210B  | MW-210B_MW-210B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LB-18_20131012 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LB-20_20141019 | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LB-24_20161013 | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-15_20140208    | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-19_20140426 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-25_20170422 | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-13_20130817    | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-17_20140305    | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | MW-21    | MW-21_MW-21-EBT-16_20140507    | 5/7/2014    | 5/7/2014      | 8260B5030B/5        |        |            |         |          |           |                        |



TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group             | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC    | CASRN    | Qualifier | Detection Limit (µg/L) |
|--------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|---------|----------|-----------|------------------------|
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-271   | MW-271_MW-271-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-638   | MW-638_MW638-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-271   | MW-271_MW-271-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW64-L-S-21_20150410        | 4/10/2015   | 4/10/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-638   | MW-638_MW-638-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-271   | MW-271_MW-271-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-85    | MW-85_MW-85-EBT-11_20130208       | 2/8/2013    | 2/8/2013      | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-271   | MW-271_MW-271-SRHPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LS-25_20170422      | 4/22/2017   | 4/22/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LB-20_20170420      | 4/20/2017   | 4/20/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-638   | MW-638_MW-638-LB-24_20161014      | 10/14/2016  | 10/14/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LS-19_20170415      | 4/25/2014   | 4/25/2014     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-259   | MW-259_MW-259-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-267   | MW-267_MW-267-SRHPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-259   | MW-259_MW-259-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LS-15_20120422      | 4/22/2012   | 4/22/2012     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-62    | MW-62_MW-62-EBT-14_20131111       | 11/11/2013  | 11/11/2013    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-63A   | MW-63A_MW63A-LB-20_20141021       | 10/21/2014  | 10/21/2014    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-63A   | MW-63A_MW63A-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LB-20_20141021      | 10/21/2014  | 10/21/2014    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-L-S-19_20140425       | 4/25/2014   | 4/25/2014     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.893                | 1           | MW-263   | MW-263_MW-263-SRHPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-L-S-19_20140421       | 4/21/2014   | 4/21/2014     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-259   | MW-259_MW-259-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 1.66                 | 1           | MW-265   | MW-265_MW-265-SRHPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-263   | MW-263_MW-263-LB-24_20161015      | 4/20/2017   | 4/20/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-270   | MW-270_MW-270-SRHPPhase1_20150515 | 5/15/2015   | 5/15/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LS-17_20130411      | 4/11/2013   | 4/11/2013     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-63A   | MW-63A_MW-63A-LB-16_20121021      | 10/14/2016  | 10/14/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-266   | MW-266_MW-266-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-638   | MW-638_MW-638-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-L-S-17_20130410       | 4/10/2013   | 4/10/2013     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-259   | MW-259_MW-259-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-271   | MW-271_MW-271-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-638   | MW-638_MW638-LB-20_20141021       | 10/21/2014  | 10/21/2014    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-L-S-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-L-S-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-270   | MW-270_MW-270-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LS-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LS-21_20150410      | 4/10/2015   | 4/10/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-267   | MW-267_MW-267-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-62    | MW-62_MW-62-L-S-15_20120421       | 4/21/2012   | 4/21/2012     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 8.21                 | 1           | MW-62    | MW-62_MW-62-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-258   | MW-258_MW-258-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW64-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-269   | MW-269_MW-269-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-265   | MW-265_MW-265-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-259   | MW-259_MW-259-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-62    | MW-62_MW-62-L-S-23_20160425       | 4/25/2016   | 4/25/2016     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 5.08                 | 1           | MW-266   | MW-266_MW-266-SRHPPhase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-64    | MW-64_MW-64-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-269   | MW-269_MW-269_20150731            | 7/31/2015   | 7/31/2015     | 8260B85030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluvial_Toluene_108-88-3 | 0.25                 | 0           | MW-267   | MW-267_MW-267-LS-23_20160421      |             |               |                      |        |            |         |          |           |                        |

TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group            | ProCUL Result (ug/L) | ProCUL Flag | Location   | Sample ID                                | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-------------------------|----------------------|-------------|------------|------------------------------------------|-------------|---------------|---------------------|--------|------------|---------|----------|-----------|------------------------|
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | PMW101-02A | PMW101-02A, PMW101-02A-LS-25-RE_20170424 | 4/24/2017   | 4/24/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-18_20141108   | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-11_20130206   | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-11_20130206   | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW98-LA-22_20151008               | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 3.3                  | 1           | PMW101-02B | PMW101-02B, PMW101-02B-LS-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW-98-LS-15_20120423              | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-15_20140208   | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-17_20140808   | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-16_20140509   | 4/9/2014    | 4/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW97-LS-21_20150409               | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LS-21_20150408    | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-19_20140425              | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-18_20141107   | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LS-19_20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LS-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW-98-LB-24_20161015              | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LB-29_20141018    | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LS-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-23_20160421              | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-17_20130410              | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-11_20130207   | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-14_20131109   | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.5                    |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-12_20130813   | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LS-21_20150408    | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-25_20170419              | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW101-02A | PMW101-02A, PMW101-02A-EBT-12_20130813   | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 2.5                  | 1           | PMW101-02A | PMW101-02A, PMW101-02A-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-11_20130207   | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-16_20140509   | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW98-LB-20_20141020               | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-LS-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-17_20140809   | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW-98-LS-19_20140524              | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW98-LS-21_20150409               | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-12_20130813   | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-15_20140207   | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-18_20141108   | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-13_20130815   | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-12_20131109   | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-12_20130508   | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-14_20131108   | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-98      | MW-98, MW-98-LB-16_20121019              | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-13_20130816   | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 1.69                 | 1           | MW-98      | MW-98, MW-98-LS-25_20170420              | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW97-LB-20_20141020               | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | MW-97      | MW-97, MW-97-LB-16_20121020              | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | WI101-04B  | WI101-04B, WI101-04B-EBT-13_20130818     | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-4      | DR1-4, DR1-4-LA-18_20131012              | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.5                  | 0           | WI101-04A  | WI101-04A, WI101-04A-EBT-15_20140208     | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-1      | DR1-1, DR1-1-LA-18_20131012              | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | WI101-03C  | WI101-03C, WI101-03C-EBT-12_20130509     | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR1-5      | DR1-5, DR1-5-EBT-11_20130206             | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-3      | DR1-3, DR1-3-LS-25_20170421              | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.5                  | 0           | DR1-5      | DR1-5, DR1-5-EBT-15_20140207             | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-2      | DR1-2, DR1-2-LA-22_20151007              | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |

TABLE B.4  
PROJULIS RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group            | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC    | CASRN    | Qualifier | Detection Limit (ug/L) |
|-------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|---------|----------|-----------|------------------------|
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR1-6A   | DR1-6A_DR1-6A-LS-23_20160424      | 4/24/2016   | 11/2/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR2-2    | DR2-2_DR2-2-EBT-14_2013106        | 11/6/2013   | 4/26/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 1                    | 4.38        | DR1-6A   | DR1-6A_DR1-6A-LS-25_20170320      | 4/20/2017   | 4/29/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | DR2-2    | DR2-2_DR2-2-EBT-13_2013081        | 8/14/2013   | 8/14/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.313                | 1           | DR2-6    | DR2-6_DR2-6-LS-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluval_Toluene_108-88-3 | 5                    | 0           | DR2-5    | DR2-5_DR2-5-EBT-17_20140811       | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 5                      |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-6    | DR2-6_DR2-6-LS-23_20161422        | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-2    | DR2-2_DR2-2-EBT-12_20130510       | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-6    | DR2-6_DR2-6-LS-21_20150411        | 4/11/2015   | 4/11/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-24_20161012        | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 5                    | 0           | DR2-5    | DR2-5_DR2-5-EBT-18_20141111       | 11/12/2014  | 11/12/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 5                      |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-6    | DR1-6_DR1-6-LS-15_20120422        | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | W101-02A | W101-02A_W101-02A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 149                  | 1           | W101-03A | W101-03A_W101-03A-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LS-21_20140508        | 4/2/2016    | 4/2/2016      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20141107     | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LS-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR1-5    | DR1-5_DR1-5-EBT-17_20160424       | 4/24/2016   | 4/24/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 3.87                 | 1           | DR1-4    | DR1-4_DR1-4-EBT-17_20140806       | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 1.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | W101-03B | W101-03B_W101-03B-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LS-21_20150410        | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20140207     | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.45                 | 1           | W101-03A | W101-03A_W101-03A-EBT-16_20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LS-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-12_20130511     | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | W101-03B | W101-03B_W101-03B-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20141109     | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 7.48                 | 1           | DR1-5    | DR1-5_DR1-5-LB-24_20161013        | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR1-5    | DR1-5_DR1-5-EBT-18_20141106       | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5    | DR1-5_DR1-5-LB-16_20121020        | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20130820     | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 12.4                 | 1           | W101-03A | W101-03A_W101-03A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 23.9                 | 1           | W101-03A | W101-03A_W101-03A-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-11_20130206     | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LA-22_20151006        | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 14.6                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-18_20140508     | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | W101-03B | W101-03B_W101-03B-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | UJ        | 1.25                   |
| Fluval_Toluene_108-88-3 | 2.64                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-17_20140806     | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5    | DR1-5_DR1-5-EBT-16_20140508       | 4/8/2014    | 4/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | JB        | 0.25                   |
| Fluval_Toluene_108-88-3 | 8                    | 1           | DR1-5    | DR1-5_DR1-5-LS-25_20170420        | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5    | DR1-5_DR1-5-LS-15_20120422        | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 28.4                 | 1           | W101-03A | W101-03A_W101-03A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-4    | DR2-4_DR2-4-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | W101-03B | W101-03B_W101-03B-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | W101-03B | W101-03B_W101-03B-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 12.4                 | 1           | W101-03A | W101-03A_W101-03A-EBT-18_20141107 | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.36                 | 0           | W101-03A | W101-03A_W101-03A-EBT-17_20130510 | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | W101-03B | W101-03B_W101-03B-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-LS-15_20120422      | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 12/23/2013           | 0           | DR2-3    | DR2-3_DR2-3-LA-18_20131106        | 11/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-3    | DR2-3_DR2-3-LS-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | DR2-4    | DR2-4_DR2-4-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.411                | 1           | PMW92-02 | PMW92-02_PMW92-02-LS-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | J         | 0.25                   |
| Fluval_Toluene_108-88-3 | 2.5                  | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-13_20130813 | 8/13/2013   | 8/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 2.5                    |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW92-02 | PMW92-02_PMW92-02-LB-22_20151006  | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW85-05 | PMW85-05_PMW85-05-LS-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 0.25                 | 0           | PMW92-02 | PMW92-02_PMW92-02-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1                    | 0           | PMW92-02 | PMW92-02_PMW92-02-LS-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1                      |
| Fluval_Toluene_108-88-3 | 14.6                 | 1           | PMW92-02 | PMW92-02_PMW92-02-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 0.25                   |
| Fluval_Toluene_108-88-3 | 1.25                 | 0           | PMW85-01 | PMW85-01_PMW85-01-EBT-14_20131105 | 11/5/2013   | 11/5/2013     | 8260B5030B/5030C/50 | T      | VOC        | Toluene | 108-88-3 | U         | 1.25                   |
| Fluval_Toluene_108-88-3 | 0.699                | 1           | PMW92-02 | PMW                               |             |               |                     |        |            |         |          |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJCL Group                    | ProJCL Result (ug/L) | ProJCL Flag | Location   | Sample ID                            | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                  | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|------------|--------------------------------------|-------------|---------------|---------------------|--------|------------|-----------------------|---------|-----------|------------------------|
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02A    | W21-02A, W21-02A-EBT-15, 20140207    | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 9.99                 | 1           | MW-103     | MW-103, MW103-LA-22, 20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02A    | W21-02A, W21-02A-EBT-12, 20130510    | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02A    | W21-02A, W21-02A-EBT-13, 20130817    | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.5                  | 0           | W21-01B    | W21-01B, W21-01B-EBT-18, 20141105    | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.5                    |
| Fluval Trichloroethene, 79-01-6 | 12.5                 | 0           | W21-01B    | W21-01B, W21-01B-EBT-12, 20140812    | 8/12/2014   | 8/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 1.57                 | 1           | MW-101B    | MW-101B, MW101B-LB-20, 20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.96                 | 1           | W21-02A    | W21-02A, W21-02A-EBT-11, 20130206    | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.714                | 1           | MW-101B    | MW-101B, MW101B-LA-22, 20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-02A    | W21-02A, W21-02A-EBT-12, 20130510    | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02A    | W21-02A, W21-02A-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-02A    | W21-02A, W21-02A-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.66                 | 1           | MW-101B    | MW-101B, MW-101B-LB-19, 20140426     | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.99                 | 1           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 22                   | 1           | MW-104     | MW-104, MW-104-LA-18, 20130112       | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.635                | 1           | MW-101T    | MW-101T, MW-101T-LB-23, 20160422     | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-01A    | W21-01A, W21-01A-EBT-16, 20140507    | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 12.5                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-01A    | W21-01A, W21-01A-EBT-16, 20140507    | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-101B    | MW-101B, MW-101B-LB-16, 20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | W21-01B    | W21-01B, W21-01B-EBT-12, 20130511    | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.5                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.51                 | 1           | W21-01B    | W21-01B, W21-01B-EBT-11, 20130205    | 2/5/2013    | 2/5/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.98                 | 1           | MW-103     | MW-103, MW-103-LB-24, 20160115       | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-01B    | W21-01B, W21-01B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-101T    | MW-101T, MW-101T-LB-23, 20160422     | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-02B    | W21-02B, W21-02B-EBT-11, 20130206    | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-01B    | W21-01B, W21-01B-EBT-13, 20130820    | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-101B    | MW-101B, MW-101B-LB-15, 20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-02B    | W21-02B, W21-02B-EBT-12, 20130510    | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.5                  | 0           | W21-02A    | W21-02A, W21-02A-EBT-14, 20131108    | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-02B    | W21-02B, W21-02B-EBT-16, 20140507    | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 21.9                 | 1           | MW-104     | MW-104, MW-104-LB-16, 20120121       | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 8.07                 | 1           | MW-104     | MW-104, MW-104-LB-25, 20170420       | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.49                 | 1           | MW-101T    | MW-101T, MW-101T-LB-20, 20141020     | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04A    | W21-04A, W21-04A-EBT-12, 20130511    | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04B    | W21-04B, W21-04B-EBT-11, 20130206    | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-101-07A | MW-101-07A, W21-01A-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.53                 | 1           | W21-04A    | W21-04A, W21-04A-EBT-11, 20130207    | 2/10/2013   | 2/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04B    | W21-04B, W21-04B-EBT-12, 20130513    | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-03B    | W21-03B, W21-03B-EBT-17, 20140806    | 8/6/2014    | 8/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.66                 | 1           | W21-04B    | W21-04B, W21-04B-EBT-12, 20130508    | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 11/65                | 0           | W21-04B    | W21-04B, W21-04B-EBT-11, 20130207    | 2/10/2013   | 2/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04B    | W21-04B, W21-04B-EBT-16, 20140511    | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 10.9                 | 1           | W21-01-07B | W21-01-07B, W21-01B-EBT-13, 20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.25                 | 0           | W21-04B    | W21-04B, W21-04B-EBT-11, 20130207    | 2/10/2013   | 2/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 6.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | W21-01-07A | W21-01-07A, W21-01A-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-03B    | W21-03B, W21-03B-EBT-18, 20141106    | 11/6/2014   | 11/6/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 7.49                 | 1           | MW-100B    | MW-100B, MW-100B-LA-18, 20130112     | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04C    | W21-04C, W21-04C-EBT-13, 20130818    | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04C    | W21-04C, W21-04C-EBT-13, 20130818    | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W21-04A    | W21-04A, W21-04A-EBT-14, 20131108    | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.25                 | 0           | W21-04A    | W21-04A, W21-04A-EBT-16, 20140507    | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 6.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.25                 | 0           | W21-04B    | W21-04B, W21-04B-EBT-15, 20140205    | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 6.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-101-07A | MW-101-07A, W21-01A-EBT-17, 20140807 | 8/7/2014    | 8/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-101T    | MW-101T, MW-101T-LB-20, 20141020     | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W21-04A    |                                      |             |               |                     |        |            |                       |         |           |                        |

TABLE B.4  
PROJUL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                    | ProCUL Result (ug/L) | ProCUL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                  | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|---------------------|--------|------------|-----------------------|---------|-----------|------------------------|
| Fluval Trichloroethene, 79-01-6 | 9.02                 | 1           | MW-206A  | MW-206A_MW-206A-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.61                 | 1           | MW-204A  | MW-204A_MW-204A-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.6                  | 1           | MW-205B  | MW-205B_MW-205B-LB-24_20161014 | 10/14/2016  | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 8.56                 | 1           | MW-206A  | MW-206A_MW-206A-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.64                 | 1           | MW-204B  | MW-204B_MW-204B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 18.7                 | 1           | MW-207B  | MW-207B_MW-207B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.14                 | 1           | MW-219   | MW-219_MW-219-LB-20_20141019   | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 28.4                 | 1           | MW-217   | MW-217_MW-217-LB-25_20170419   | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 32.8                 | 1           | MW-218   | MW-218_MW-218-LB-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 8.56                 | 1           | MW-210B  | MW-210B_MW-210B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 34.5                 | 1           | MW-218   | MW-218_MW-218-LB-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.93                 | 1           | MW-210B  | MW-210B_MW-210B-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 9.14                 | 1           | MW-208B  | MW-208B_MW-208B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.21                 | 1           | MW-207B  | MW-207B_MW-207B-LS-17_20130411 | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 1                      |
| Fluval Trichloroethene, 79-01-6 | 1.59                 | 1           | MW-215B  | MW-215B_MW-215B-LB-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | MW-21    | MW-21_MW-21-EBT-16_20140510    | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | UJ        | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.3                 | 1           | MW-210B  | MW-210B_MW-210B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.506                | 1           | MW-21    | MW-21_MW-21-EBT-15_20140208    | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 10.1                 | 1           | MW-210B  | MW-210B_MW-210B-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 24.5                 | 1           | MW-207B  | MW-207B_MW-207B-LS-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 34.2                 | 1           | MW-213   | MW-213_MW-213-LB-16_20121022   | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 18.6                 | 1           | MW-207B  | MW-207B_MW-207B-LS-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.89                 | 1           | MW-219   | MW-219_MW-219-LB-18_20141020   | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 18.7                 | 1           | MW-207B  | MW-207B_MW-207B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 9.17                 | 1           | MW-21    | MW-21_MW-21-LB-16_20121020     | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 28.6                 | 1           | MW-212   | MW-212_MW-212-LB-24_20161013   | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 22.5                 | 1           | MW-208B  | MW-208B_MW-208B-LB-17_20140510 | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 10.9                 | 1           | MW-212   | MW-212_MW-212-EBT-12_20130511  | 5/11/2013   | 5/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 44                   | 1           | MW-217   | MW-217_MW-217-LB-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 24.3                 | 1           | MW-209B  | MW-209B_MW-209B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 33                   | 1           | MW-217   | MW-217_MW-217-LB-19_20140510   | 4/24/2014   | 4/24/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 16.7                 | 1           | MW-207B  | MW-207B_MW-207B-LS-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.3                 | 1           | MW-208B  | MW-208B_MW-208B-LS-23_20160421 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5.11                 | 1           | MW-219   | MW-219_MW-219-LB-25_20170422   | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 29.1                 | 1           | MW-218   | MW-218_MW-218-LB-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.28                 | 1           | MW-219   | MW-219_MW-219-LB-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.62                 | 1           | MW-219   | MW-219_MW-219-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.76                 | 1           | MW-210B  | MW-210B_MW-210B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 8.86                 | 1           | MW-212   | MW-212_MW-212-LB-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 43.9                 | 1           | MW-218   | MW-218_MW-218-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.52                 | 1           | MW-215B  | MW-215B_MW-215B-LB-20_20141021 | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 13.1                 | 1           | MW-210B  | MW-210B_MW-210B-LA-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | MW-21    | MW-21_MW-21-EBT-17_20140605    | 6/5/2014    | 6/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | UJ        | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 18.5                 | 1           | MW-207B  | MW-207B_MW-207B-LB-14_20121021 | 10/14/2012  | 10/14/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 10.2                 | 1           | MW-210B  | MW-210B_MW-210B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 35.9                 | 1           | MW-217   | MW-217_MW-217-LB-24_20161015   | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 15                   | 1           | MW-207B  | MW-207B_MW-207B-LB-20_20141020 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.28                 | 1           | MW-21    | MW-21_MW-21-EBT-18_20141020    | 4/16/2014   | 4/16/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.14                 | 1           | MW-219   | MW-219_MW-219-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.2                 | 1           | MW-212   | MW-212_MW-212-LB-15_20120422   | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | UJ        | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-219   | MW-219_MW-219-EBT-16_20140510  | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.39                 | 1           | MW-208B  | MW-208B_MW-208B-LS-21_20150410 | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5.72                 | 1           | MW-212   | MW-212_MW-212-EBT-18_20141109  | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 44.6                 | 1           | MW-213   | MW-213_MW-213-LB-15_20120421   | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.4                 | 1           | MW-209B  | MW-209B_MW-209B-LB-22_20151008 | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.24                 | 1           | MW-207B  | MW-207B_MW-207B-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 14                   | 1           | MW-213   | MW-213_MW-213-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 7.75                 | 1           | MW-213   | MW-213_MW-213-EBT-15_20140211  | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 32.9                 | 1           | MW-218   | MW-218_MW-218-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.58                 | 1           | MW-218   | MW-218_MW-218-LB-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 33.9                 | 1           | MW-209B  | MW-209B_MW-209B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 10.4                 | 1           | MW-212   | MW-212_MW-212-EBT-11_20130211  | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 31.8</               |             |          |                                |             |               |                     |        |            |                       |         |           |                        |

TABLE B.4  
PROJCL.S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                    | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                        | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                  | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|----------|----------------------------------|-------------|---------------|---------------------|--------|------------|-----------------------|---------|-----------|------------------------|
| Fluval Trichloroethene, 79-01-6 | 88.7                 | 1           | MW-258   | MW-258_MW-258-LB-17_20130411     | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 1                      |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LB-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.68                 | 1           | MW-26    | MW-26_MW-26-LB-15_20120423       | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.28                 | 1           | MW-269   | MW-269_MW-269_20150731           | 7/31/2015   | 7/31/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 8.84                 | 1           | MW-265   | MW-265_MW-265-LB-25_20170420     | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.436                | 1           | MW-266   | MW-266_MW-266-LB-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 93                   | 1           | MW-258   | MW-258_MW-258-LB-16_20121021     | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.3                  | 1           | MW-261   | MW-261_MW-261-LB-21_20150409     | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 24.1                 | 1           | MW-62    | MW-62_MW-62-EBT-14_20131111      | 11/11/2013  | 11/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.481                | 1           | MW-25A   | MW-25A_MW-25A-LB-24_20181015     | 10/15/2018  | 10/15/2018    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.821                | 1           | MW-85    | MW-85_MW-85-EBT-16_20140311      | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.45                 | 1           | MW-62    | MW-62_MW-62-LB-25_20170420       | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.22                 | 1           | MW-260   | MW-260_MW-260-LB-20_20141020     | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 132                  | 1           | MW-62    | MW-62_MW-62-EBT-13_20130820      | 8/20/2013   | 8/20/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 20.2                 | 1           | MW-259   | MW-259_MW-259-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 15.7                 | 1           | MW-259   | MW-259_MW-259-LB-21_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.36                 | 1           | MW-261   | MW-261_MW-261-LB-19_20140425     | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.8                  | 1           | MW-271   | MW-271_MW-271-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 10.7                 | 1           | MW-287   | MW-287_MW-287-SRHPHase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 17.8                 | 1           | MW-85    | MW-85_MW-85-EBT-11_20131028      | 10/8/2013   | 2/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 98.5                 | 1           | MW-62    | MW-62_MW-62-EBT-12_20130509      | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.24                 | 1           | MW-261   | MW-261_MW-261-LB-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.36                 | 1           | MW-25A   | MW-25A_MW-25A-LB-18_20131011     | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 30.3                 | 1           | MW-263   | MW-263_MW-263-SRHPHase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.24                 | 1           | MW-26    | MW-26_MW-26-LA-18_20131012       | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 61.9                 | 1           | MW-62    | MW-62_MW-62-EBT-11_20130211      | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 3.6                  | 1           | MW-271   | MW-271_MW-271-LB-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.4                  | 1           | MW-85    | MW-85_MW-85-EBT-17_20140310      | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.11                 | 1           | MW-88    | MW-88_MW-88-LB-19_20140426       | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 26.7                 | 1           | MW-64    | MW-64_MW-64-LB-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5.45                 | 1           | MW-271   | MW-271_MW-271-SRHPHase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 36.9                 | 1           | MW-263   | MW-263_MW-263-LB-23_20161015     | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-257   | MW-257_MW-257-LB-18_20121012     | 10/12/2012  | 10/12/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.56                 | 1           | MW-88    | MW-88_MW-88-LB-23_20160421       | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.95                 | 1           | MW-62    | MW-62_MW-62-LB-15_20120421       | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.744                | 1           | MW-85    | MW-85_MW-85-EBT-14_20131011      | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.257                | 1           | MW-266   | MW-266_MW-266-SRHPHase1_20150516 | 5/16/2015   | 5/16/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | MW-62    | MW-62_MW-62-EBT-17_20140810      | 8/10/2014   | 8/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | UJ        | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.301                | 1           | MW-25A   | MW-25A_MW-25A-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 13.4                 | 1           | MW-287   | MW-287_MW-287-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 21.4                 | 1           | MW-259   | MW-259_MW-259-LB-20_20141020     | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.484                | 1           | MW-25A   | MW-25A_MW-25A-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.58                 | 1           | MW-88    | MW-88_MW-88-LB-25_20170419       | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 163                  | 1           | MW-62    | MW-62_MW-62-LB-16_20121012       | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 22.4                 | 1           | MW-259   | MW-259_MW-259-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | MW-62    | MW-62_MW-62-EBT-16_20140510      | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | UJ        | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 85.8                 | 1           | MW-258   | MW-258_MW-258-LB-18_20131012     | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 50.8                 | 1           | MW-258   | MW-258_MW-258-LB-20_20141021     | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 24.6                 | 1           | MW-62    | MW-62_MW-62-LB-23_20161015       | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.57                 | 1           | MW-62    | MW-62_MW-62-LB-24_20161014       | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.39                 | 1           | MW-62    | MW-62_MW-62-EBT-15_20140211      | 2/11/2014   | 2/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 13.6                 | 1           | MW-287   | MW-287_MW-287-LB-23_20160421     | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 22                   | 1           | MW-259   | MW-259_MW-259-LB-17_20140310     | 4/10/2014   | 4/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 15.9                 | 1           | MW-259   | MW-259_MW-259-LB-16_20121021     | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.489                | 1           | MW-25A   | MW-25A_MW-25A-LB-20_20141020     | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.23                 | 1           | MW-88    | MW-88_MW-88-LB-21_20150410       | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | MW-85    | MW-85_MW-85-EBT-18_20131012      | 10/9/2012   | 11/9/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.77                 | 1           | MW-85    | MW-85_MW-85-EBT-13_20130814      | 8/14/2013   | 8/14/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 15.7                 | 1           | MW-267   | MW-267_MW-267-LB-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.8                  | 1           | MW-85    | MW-85_MW-85-EBT-15_20140205      | 2/5/2014    | 2/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.82                 | 1           | MW-271   | MW-271_MW-271-LB-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 18.9                 | 1           | MW-287   | MW-287_MW-287-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.16                 | 1           | MW-52    | MW-52_MW52-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.52                 | 1           | MW-261   | MW-261_MW-261-LB-20_20141020     | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5.76                 | 1           | MW-85    | MW-85_MW-85-EBT-12_20130510      | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 |           | 0.2                    |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                    | ProCUL Result (ug/L) | ProCUL Flag | Location   | Sample ID                               | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                  | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|------------|-----------------------------------------|-------------|---------------|---------------------|--------|------------|-----------------------|---------|-----------|------------------------|
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | PWW101-06A | PWW101-06A, PWW101-06A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.14                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-15, 20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.785                | 1           | PWW101-05  | PWW101-05, PWW101-05-LS-19, 20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.05                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.98                 | 1           | PWW101-06B | PWW101-06B, PWW101-06B-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.81                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 68                   | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-16, 20140510 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.02                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.34                 | 1           | PWW101-05  | PWW101-05, PWW101-05-LS-21, 20150423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 67.8                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140207 | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.833                | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140207 | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.69                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.82                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-17, 20140809 | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.38                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-12, 20130508 | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 62                   | 1           | PWW101-05  | PWW101-05, PWW101-05-LS-17, 20150423    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.892                | 1           | PWW101-05  | PWW101-05, PWW101-05-LS-17, 20150423    | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.89                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-12, 20130508 | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.56                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140207 | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.68                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140207 | 10/9/2013   | 10/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.02                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.61                 | 1           | PWW101-05  | PWW101-05, PWW101-05-LS-21, 20150408    | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.707                | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140207 | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 53.1                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140207 | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.312                | 1           | PWW101-06A | PWW101-06A, PWW101-06A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.13                 | 1           | PWW101-05  | PWW101-05, PWW101-05-LB-20, 20141018    | 10/18/2014  | 10/18/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.32                 | 1           | PWW101-05  | PWW101-05, PWW101-05-LB-25, 20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.795                | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20170421 | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 10.9                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20170421 | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.25                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.44                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-LS-15, 20120422  | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | PWW101-04A | PWW101-04A, PWW101-04A-LS-15, 20120422  | 11/7/2014   | 11/7/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 4.04                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.31                 | 1           | PWW101-05  | PWW101-05, PWW101-05-LB-24, 20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.82                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-LS-15, 20120422  | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.18                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-LS-15, 20120422  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.61                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-LS-17, 20130410  | 4/21/2013   | 4/21/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5.6                  | 1           | PWW101-04B | PWW101-04B, PWW101-04B-LB-16, 20121019  | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.301                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-15, 20140207 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.317                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-15, 20140207 | 7/7/2014    | 7/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | PWW101-06B | PWW101-06B, PWW101-06B-EBT-15, 20170421 | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.13                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.347                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 22.7                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-15, 20140507 | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.38                 | 1           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-17, 20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 7.03                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-12, 20130508 | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.747                | 1           | PWW101-03B | PWW101-03B, PWW101-03B-LS-25, 20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.82                 | 1           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-11, 20130206 | 2/6/2013    | 2/6/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.44                 | 0.32B       | PWW101-03B | PWW101-03B, PWW101-03B-LS-25, 20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.272                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 70.7                 | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-13, 20130815 | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.265                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 3.11                 | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-15, 20140207 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 8.65                 | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-15, 20140207 | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 28.5                 | 1           | PWW101-04A | PWW101-04A, PWW101-04A-EBT-14, 20131108 | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.62                 | 1           | PWW101-04B | PWW101-04B, PWW101-04B-EBT-15, 20140507 | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.268                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | PWW101-03B | PWW101-03B, PWW101-03B-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.5                  | 0           | PWW101-02A | PWW101-02A, PWW101-02A-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.304                | 1           | PWW101-07A | PWW101-07A, PWW101-07A-EBT-17, 20140809 | 8/8/2014    | 8/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-  |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProjCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                    | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                          | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                  | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|----------|------------------------------------|-------------|---------------|-------------------|--------|------------|-----------------------|---------|-----------|------------------------|
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W101-02A | W101-02A_W101-02A-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-14, 20131110 | 11/10/2013  | 11/10/2013    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | DR1-4A   | DR1-4A_DR1-4A-EBT-16, 20140508     | 5/9/2014    | 5/9/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.25                 | 0           | W101-04A | W101-04A_W101-04A-EBT-18, 20141107 | 11/17/2014  | 11/17/2014    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 6.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.17                 | 1           | DR2-3    | DR2-3_DR2-3-LA-22, 20151006        | 10/6/2015   | 10/6/2015     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.16                 | 1           | DR1-6    | DR1-6_DR1-6-LA-15, 20120422        | 4/22/2012   | 4/22/2012     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 6.25                 | 0           | W101-02C | W101-02C_W101-02C-EBT-18, 20141107 | 11/17/2014  | 11/17/2014    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 6.25                   |
| Fluval Trichloroethene, 79-01-6 | 74.4                 | 1           | DR1-5A   | DR1-5A_DR1-5A-LA-15, 20120422      | 4/22/2012   | 4/22/2012     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.351                | 1           | DR1-1    | DR1-1_DR1-1-LA-22, 20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.22                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-11, 20130206       | 2/6/2013    | 2/6/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5                    | 0           | W101-02C | W101-02C_W101-02C-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 5                      |
| Fluval Trichloroethene, 79-01-6 | 5                    | 0           | W101-03C | W101-03C_W101-03C-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 5                      |
| Fluval Trichloroethene, 79-01-6 | 2.89                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-13, 20130816       | 8/16/2013   | 8/16/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-LB-24, 20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 30.2                 | 1           | DR1-5A   | DR1-5A_DR1-5A-LA-23, 20160423      | 4/24/2016   | 4/24/2016     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.34                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-18, 20141107     | 11/17/2014  | 11/17/2014    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.663                | 1           | DR2-2    | DR2-2_DR2-2-LA-25, 20170419        | 4/19/2017   | 4/19/2017     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-11, 20130207 | 2/7/2013    | 2/7/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 80.5                 | 1           | DR1-5A   | DR1-5A_DR1-5A-LB-16, 20121020      | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.571                | 1           | DR1-4A   | DR1-4A_DR1-4A-22, 20151007         | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 9                    | 0           | W101-04C | W101-04C_W101-04C-EBT-11, 20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 5                      |
| Fluval Trichloroethene, 79-01-6 | 1.01                 | 1           | DR2-4    | DR2-4_DR2-4-LA-22, 20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.12                 | 1           | DR2-4    | DR2-4_DR2-4-LB-16, 20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.26                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-17, 20140807     | 8/7/2014    | 8/7/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.898                | 1           | DR2-4    | DR2-4_DR2-4-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-16, 20140508     | 5/8/2014    | 5/8/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | DR1-4    | DR1-4_DR1-4-LB-16, 20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.35                 | 1           | DR1-6    | DR1-6_DR1-6-EBT-12, 20130427       | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.309                | 1           | DR1-1    | DR1-1_DR1-1-LB-16, 20121019        | 10/19/2012  | 10/19/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.5                 | 0           | W101-02C | W101-02C_W101-02C-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.762                | 1           | DR2-2    | DR2-2_DR2-2-LA-25, 20170419        | 4/22/2017   | 4/22/2017     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.29                 | 1           | DR2-3    | DR2-3_DR2-3-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-LA-25, 20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-02C | W101-02C_W101-02C-EBT-15, 20140208 | 2/8/2014    | 2/8/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.41                 | 1           | DR1-4    | DR1-4_DR1-4-LA-18, 20131012        | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 12.5                 | 0           | W101-03C | W101-03C_W101-03C-EBT-15, 20140209 | 2/9/2014    | 2/9/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-02C | W101-02C_W101-02C-EBT-13, 20130815 | 8/15/2013   | 8/15/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W101-03C | W101-03C_W101-03C-EBT-13, 20130816 | 8/16/2013   | 8/16/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-03C | W101-03C_W101-03C-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 12.5                 | 0           | W101-04B | W101-04B_W101-04B-EBT-17, 20140511 | 5/11/2014   | 5/11/2014     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 12.5                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | DR1-6A   | DR1-6A_DR1-6A-EBT-12, 20130512     | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 0.344                | 1           | W101-02B | W101-02B_W101-02B-EBT-12, 20130512 | 5/12/2013   | 5/12/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-04A | W101-04A_W101-04A-EBT-11, 20130209 | 2/9/2013    | 2/9/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 98.1                 | 1           | DR1-4A   | DR1-4A_DR1-4A-EBT-16, 20121020     | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 14                   | 1           | DR2-5    | DR2-5_DR2-5-EBT-12, 20130508       | 5/8/2013    | 5/8/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.49                 | 1           | DR1-6    | DR1-6_DR1-6-LB-16, 20121021        | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-16, 20140508 | 5/8/2014    | 5/8/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 4.27                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-17, 20140807     | 8/7/2014    | 8/7/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 4.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.85                 | 1           | DR2-3    | DR2-3_DR2-3-LB-16, 20121021        | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | W101-02B | W101-02B_W101-02B-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 5                    | 0           | DR2-2    | DR2-2_DR2-2-EBT-17, 20140812       | 8/12/2014   | 8/12/2014     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 5                      |
| Fluval Trichloroethene, 79-01-6 | 0.25                 | 0           | DR1-6    | DR1-6_DR1-6-LA-25, 20170419        | 4/22/2017   | 4/22/2017     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 26.4                 | 1           | DR1-6A   | DR1-6A_DR1-6A-EBT-13, 20130816     | 8/16/2013   | 8/16/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.7                  | 1           | DR1-3    | DR1-3_DR1-3-LA-15, 20150408        | 4/8/2015    | 4/8/2015      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W101-02A | W101-02A_W101-02A-EBT-18, 20141106 | 11/6/2014   | 11/6/2014     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.12                 | 1           | DR1-6A   | DR1-6A_DR1-6A-EBT-14, 20131109     | 11/9/2013   | 11/9/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 9.91                 | 1           | DR1-3    | DR1-3_DR1-3-LB-24, 20161016        | 10/16/2016  | 10/16/2016    | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene, 79-01-6 | 62.1                 | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-11, 20130206     | 2/6/2013    | 2/6/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | DR1-5    | DR1-5_DR1-5-EBT-11, 20130206       | 2/6/2013    | 2/6/2013      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 1.25                 | 0           | W101-02A | W101-02A_W101-02A-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 1.25                   |
| Fluval Trichloroethene, 79-01-6 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-17, 20140808 | 8/8/2014    | 8/8/2014      | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 2.5                    |
| Fluval Trichloroethene, 79-01-6 | 21.8                 | 1           | DR2-5    | DR2-5_DR2-5-EBT-13, 20130814       | 8/14/2013   | 8/14/2013     | 8260B5030B5030C50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| Fluval Trichloroethene,         |                      |             |          |                                    |             |               |                   |        |            |                       |         |           |                        |



TABLE B.4  
PROJULS.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProCUL Group                    | ProCUL Result (ug/L) | ProCUL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC           | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|----------------|---------|-----------|------------------------|
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MMW-101B | MMW-101B_MMW-101B-LS-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1                    | 0           | MMW-101B | MMW-101B_MMW-101B-LS-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1                      |
| Fluoride_Vinyl chloride_75-01-4 | 155                  | 0           | MMW-100B | MMW-100B_MMW-100B-LA-22_20150007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-04A | W121-04A_W121-04A-EBT-17_20140806 | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.259                | 1           | W121-03A | W121-03A_W121-03A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-04A | W121-04A_W121-04A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MMW-103  | MMW-103_MMW-103-LA-18_20130112    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 6.25                 | 0           | W185-06  | W185-06_W185-06-EBT-17_20140812   | 8/12/2014   | 8/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 6.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W121-03A | W121-03A_W121-03A-EBT-12_20130508 | 5/8/2013    | 5/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.265                | 1           | W121-03A | W121-03A_W121-03A-EBT-14_20131108 | 11/8/2013   | 11/8/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W185-05  | W185-05_W185-05-EBT-16_20140511   | 5/11/2014   | 5/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W185-05  | W185-05_W185-05-EBT-16_20131106   | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-05A | W101-05A_W101-05A-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-04A | W121-04A_W121-04A-EBT-12_20130511 | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.497                | 1           | W121-03A | W121-03A_W121-03A-EBT-11_20130206 | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 5                    | 0           | W121-04A | W121-04A_W121-04A-EBT-16_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 5                      |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W121-02B | W121-02B_W121-02B-EBT-18_20141105 | 11/5/2014   | 11/5/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W185-06  | W185-06_W185-06-EBT-18_20141110   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W185-06  | W185-06_W185-06-EBT-16_20140512   | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | W101-04C | W101-04C_W101-04C-EBT-11_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-15_20140206 | 2/6/2014    | 2/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MMW-101B | MMW-101B_MMW-101B-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-05C | W101-05C_W101-05C-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-18_20141111 | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 130                  | 0           | MMW-100B | MMW-100B_MMW-100B-LA-18_20130112  | 4/23/2013   | 4/23/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MMW-104  | MMW-104_MMW-104-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W192-08  | W192-08_W192-08-EBT-15_20140210   | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W121-01A | W121-01A_W121-01A-EBT-17_20140807 | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-05B | W101-05B_W101-05B-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | W192-03  | W192-03_W192-03-EBT-11_20130209   | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MMW-104  | MMW-104_MMW-104-LA-18_20130102    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W192-02  | W192-02_W192-02-EBT-16_20140510   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-17_20140804 | 8/4/2014    | 8/4/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 1.81                 | 1           | W101-07C | W101-07C_W101-07C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 5                    | 0           | W101-07C | W101-07C_W101-07C-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 5                      |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | W192-02  | W192-02_W192-02-EBT-15_20140210   | 8/12/2013   | 8/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W192-03  | W192-03_W192-03-EBT-14_20131106   | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 5                    | 0           | W192-07  | W192-07_W192-07-EBT-11_20130210   | 2/10/2013   | 2/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 5                      |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | MMW-101B | MMW-101B_MMW-101B-LA-18_20130112  | 4/23/2013   | 4/23/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W192-03  | W192-03_W192-03-EBT-18_20141110   | 11/10/2014  | 11/10/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W192-03  | W192-03_W192-03-EBT-16_20140512   | 5/12/2014   | 5/12/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-05C | W101-05C_W101-05C-EBT-12_20130513 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-11_20130207 | 2/7/2013    | 2/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MMW-104  | MMW-104_MMW-104-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-07A | W101-07A_W101-07A-EBT-17_20140807 | 8/7/2014    | 8/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-07C | W101-07C_W101-07C-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-16_20140509 | 5/9/2014    | 5/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | W101-05C | W101-05C_W101-05C-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W192-08  | W192-08_W192-08-EBT-16_20140507   | 8/12/2013   | 8/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 6.25                 | 0           | W121-04B | W121-04B_W121-04B-EBT-16_20140507 | 5/7/2014    | 5/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 6.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W121-01A | W121-01A_W121-01A-EBT-11_20130205 | 2/5/2013    | 2/5/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W101-07B | W101-07B_W101-07B-EBT-18_20141108 | 11/8/2014   | 11/8/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W121-01A | W121-01A_W121-01A-EBT-12_20130507 | 5/7/2013    | 5/7/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W192-03  | W192-03_W192-03-EBT-16_20140512   | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 5                    | 0           | W192-08  | W192-08_W192-08-EBT-14_20131106   | 11/6/2013   | 11/6/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 5                      |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-07A | W101-07A_W101-07A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 6.25                 | 0           | W192-07  | W192-07_W192-07-EBT-16_20140513   | 5/13/2014   | 5/13/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride |         |           |                        |

TABLE B.4  
PROJUL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                    | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC           | CASRN   | Qualifier | Detection Limit (µg/L) |
|---------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|----------------------|--------|------------|----------------|---------|-----------|------------------------|
| Fluoride_Vinyl chloride_75-01-4 | 0.81                 | 1           | MW-2058  | MW-2058_MW-2058-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LS-15_20140426 | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LS-25_20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-206B  | MW-206B_MW-206B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LA-22_20151007 | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LS-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.609                | 1           | MW-2058  | MW-2058_MW-2058-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LB-24_20161013 | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LS-25_20170421 | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LA-18_20131011 | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LS-23_20160421   | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.17                 | 1           | MW-2058  | MW-2058_MW-2058-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 1           | MW-2058  | MW-2058_MW-2058-LS-21_20140429 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.32                 | 1           | MW-2058  | MW-2058_MW-2058-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-16_20121020   | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-1998  | MW-1998_MW-1998-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LB-24_20161014   | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.28                 | 1           | MW-2058  | MW-2058_MW-2058-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-200   | MW-200_MW-200-LS-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.18                 | 1           | MW-2058  | MW-2058_MW-2058-LS-23_20160422 | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LS-25_20170421     | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-14_20131111  | 11/11/2013  | 11/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LB-24_20161016   | 10/16/2016  | 10/16/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-215B  | MW-215B_MW-215B-LB-16_20121020 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LB-16_20121021 | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-213   | MW-213_MW-213-EBT-16_20140511  | 5/11/2014   | 5/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | UJ        | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LB-16_20121020 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LB-24_20161014   | 4/26/2016   | 4/26/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-17_20130410 | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-24_20161013   | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-22_20151008 | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-21    | MW-21_MW-21-EBT-18_20141106    | 11/6/2014   | 11/6/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-25_20170420 | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-21_20150409 | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LA-22_20151007   | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-EBT-13_20130820  | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-24_20161014 | 10/11/2016  | 10/11/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-19_20140425 | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LS-17_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-218   | MW-218_MW-218-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LS-25_20170421     | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-16_20121022   | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-219   | MW-219_MW-219-LS-23_20160423   | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-21    | MW-21_MW-21-LB-16_20121020     | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | MW-213   | MW-213_MW-213-EBT-15_20140211  | 2/11/2014   | 2/11/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LB-24_20161014 | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-207B  | MW-207B_MW-207B-LS-15_20120423 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-209B  | MW-209B_MW-209B-LS-21_20150409 | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-212   | MW-212_MW-212-LB-24_20161013   | 4/13/2016   | 4/13/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LB-20_20141020   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1                    | 0           | MW-219   | MW-219_MW-219-LS-17_20130410   | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1                      |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-216   | MW-216_MW-216-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-217   | MW-217_MW-217-LS-25_20170421   | 4/24/2017   | 4/24/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | MW-208B  | MW-208B_MW-208B-LS-19_20121020 | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         |                        |

TABLE B.4  
PROJULS.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Notes:  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJULS software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJULS Group                   | ProJULS Result (ug/L) | ProJULS Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC           | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|-----------------------|--------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|----------------|---------|-----------|------------------------|
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-267   | MW-267_MW-267-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-265   | MW-265_MW-265-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-26    | MW-26_MW-26-LS-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.989                 | 1            | MW-85    | MW-85_MW-85-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-85    | MW-85_MW-85-EBT-13_20130814       | 8/14/2013   | 8/14/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-266   | MW-266_MW-266-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-25A   | MW-25A_MW-25A-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW88-LA-22_20151006         | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-270   | MW-270_MW-270-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW88-LB-20_20140221         | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-270   | MW-270_MW-270-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-52    | MW-52_MW52-LB-20_20141020         | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-261   | MW-261_MW-261-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-270   | MW-270_MW-270-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW-88-LS-25_20120423        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-270   | MW-270_MW-270_20150730            | 7/30/2015   | 7/30/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-270   | MW-270_MW-270-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-39    | MW-39_MW39-LA-22_20151008         | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-261   | MW-261_MW-261-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-52    | MW-52_MW-52-LB-24_20161015        | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-270   | MW-270_MW-270-SRIPPhase1_20150515 | 5/15/2015   | 5/15/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW-88-LS-17_20130410        | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-263   | MW-263_MW-263-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-271   | MW-271_MW-271-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-263   | MW-263_MW-263-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-260   | MW-260_MW-260-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                  | 1            | MW-62    | MW-62_MW-62-EBT-11_20130412       | 4/11/2012   | 4/11/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LS-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-63A   | MW-63A_MW63A-LB-20_20141021       | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-260   | MW-260_MW-260-LS-23_20161015      | 4/10/2016   | 4/10/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-63A   | MW-63A_MW-63A-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-279   | MW-279_MW-279-LS-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-281   | MW-281_MW-281-LS-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW-88-LS-19_20140425        | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-63A   | MW-63A_MW-63A-LB-20_20141021      | 10/14/2014  | 10/14/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-280   | MW-280_MW-280-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-280   | MW-280_MW-280-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-265   | MW-265_MW-265-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-279   | MW-279_MW279-SR1216_20161209      | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-281   | MW-281_MW-281-SR1216_20161209     | 12/9/2016   | 12/9/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW-88-LS-25_20170419        | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW88-LB-21_20140410         | 4/10/2014   | 4/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 6.25                  | 0            | MW-62    | MW-62_MW-62-EBT-18_20141109       | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 6.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-62    | MW-62_MW-62-LS-23_20160425        | 4/25/2016   | 4/25/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-257   | MW-257_MW-257-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-88    | MW-88_MW-88-LS-23_20160422        | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-257   | MW-257_MW-257-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-261   | MW-261_MW-261-LB-24_20161014      | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 6.5                   | 1            | MW-62    | MW-62_MW-62-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 8.47                  | 1            | MW-259   | MW-259_MW-259-LS-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.2                   | 1            | MW-62    | MW-62_MW-62-LB-16_20121022        | 10/22/2012  | 10/22/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                   | 0            | MW-62    | MW-62_MW-62-EBT-17_20140810       | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | UJ        | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LB-20_20141020      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-62    | MW-62_MW-62-LS-15_20120421        | 4/21/2012   | 4/21/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-63A   | MW-63A_MW63A-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                   | 0            | MW-62    | MW-62_MW-62-EBT-16_20140510       | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | UJ        | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-271   | MW-271_MW-271-SRIPPhase1_20150518 | 5/16/2015   | 5/16/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-261   | MW-261_MW-261-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   | MW-259_MW-259-LS-19_20130410      | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-271   | MW-271_MW-271-LS-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-263   | MW-263_MW-263-LB-18_20161015      | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-261   | MW-261_MW-261-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-271   | MW-271_MW-271-LS-25_20170419      | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                  | 0            | MW-259   |                                   |             |               |                      |        |            |                |         |           |                        |

TABLE B.4  
PROJUL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJUL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJUL Group | ProJUL Result (µg/L) | ProJUL Flag | Location   | Sample ID                               | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC           | CASRN   | Qualifier | Detection Limit (µg/L) |
|--------------|----------------------|-------------|------------|-----------------------------------------|-------------|---------------|---------------------|--------|------------|----------------|---------|-----------|------------------------|
| Fluoride     | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LS-25, 20170421  | 4/21/2017   | 8/26/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04B | MW-97, MW-97-LB-16, 20121020            | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-17, 20140809 | 8/15/2013   | 8/15/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-97      | MW-97, MW-97-LA-22, 20151008            | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-03   | PMW21-03, PMW21-03-LS-19, 20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-98      | MW-98, MW-98-LS-15, 20120423            | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-LB-16, 20121022  | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LS-21, 20150408  | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-16, 20140509 | 5/5/2014    | 5/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-17, 20140809 | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LS-17, 20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-17, 20130410            | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04B | PMW101-04B, PMW101-04B-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04B-LS-15, 20120422  | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LB-20, 20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-22, 20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 2.87                 | 1           | PMW101-04A | PMW101-04A, PMW101-04A-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-06A | PMW101-06A, PMW101-06A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-96      | MW-96, MW-96-LB-20, 20141020            | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-97      | MW-97, MW-97-LB-20, 20141020            | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-04A | PMW101-04A, PMW101-04A-EBT-12, 20130513 | 5/13/2013   | 5/13/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-96      | MW-96, MW-96-LB-16, 20121020            | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 2.5                  | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-18, 20141105     | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride     | 0.25                 | 0           | MW-98      | MW-98, MW-98-LA-22, 20151008            | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-11, 20130207     | 2/7/2013    | 2/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.274                | 1           | PMW21-01   | PMW21-01, PMW21-01-LS-25, 20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride     | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LA-18, 20131012          | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.296                | 1           | PMW21-01   | PMW21-01, PMW21-01-LS-23RE, 20160523    | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride     | 14.8                 | 1           | PMW101-03A | PMW101-03A, PMW101-03A-LA-22, 20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 4.53                 | 1           | PMW101-02B | PMW101-02B, PMW101-02B-LB-20, 20141019  | 4/14/2016   | 4/14/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-13, 20130818     | 8/18/2013   | 8/18/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LS-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 1.25                 | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-17, 20140805     | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride     | 0.25                 | 0           | MW-94A     | MW-94A, MW-94A-LA-22, 20151008          | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-03A | PMW101-03A, PMW101-03A-LA-18, 20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 1.25                 | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-16, 20140507     | 5/7/2014    | 5/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride     | 0.25                 | 0           | MW-98      | MW-98, MW-98-LA-23, 20131011            | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 1.25                 | 0           | PMW21-01   | PMW21-01, PMW21-01-EBT-18, 20141026     | 10/26/2014  | 10/26/2014    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride     | 0.255                | 1           | PMW21-01   | PMW21-01, PMW21-01-LB-24, 20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride     | 3.49                 | 1           | MW-92      | MW-92, MW-92-LS-23, 20160420            | 4/20/2016   | 4/20/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-14, 20131109 | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 7.15                 | 0           | MW-92      | MW-92, MW-92-LS-21, 20150410            | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.315                | 1           | PMW21-02   | PMW21-02, PMW21-02-LS-23RE, 20160523    | 5/23/2016   | 5/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-LB-24, 20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-15, 20140207 | 2/7/2014    | 2/7/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-18, 20141105     | 11/5/2014   | 11/5/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-98      | MW-98, MW-98-LB-16, 20121020            | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 2.39                 | 1           | PMW101-02B | PMW101-02B, PMW101-02B-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-11, 20130207     | 5/8/2014    | 5/8/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 11/20/21-02          | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-18, 20141018     | 5/11/2012   | 5/11/2012     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 1.25                 | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-16, 20140509 | 5/9/2014    | 5/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-15, 20140206     | 2/6/2014    | 2/6/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | MW-97      | MW-97, MW-97-LS-15, 20120423            | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-14, 20131108     | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 1.13                 | 0           | PMW101-03B | PMW101-03B, PMW101-03B-LB-24, 20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 4.48                 | 1           | MW-92      | MW-92, MW-92-LS-25, 20170419            | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 2.5                  | 0           | PMW101-02B | PMW101-02B, PMW101-02B-EBT-18, 20141108 | 11/8/2014   | 11/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride     | 0.25                 | 0           | PMW21-02   | PMW21-02, PMW21-02-EBT-17, 20140805     | 8/5/2014    | 8/5/2014      | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-07A | PMW101-07A, PMW101-07A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 13.1                 | 1           | PMW101-03A | PMW101-03A, PMW101-03A-LS-23, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 0.25                 | 0           | PMW101-07B | PMW101-07B, PMW101-07B-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride     | 5                    | 0           | PMW101-02B |                                         |             |               |                     |        |            |                |         |           |                        |

TABLE B.4  
PROJCL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN-HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                    | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC           | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|----------------------|--------|------------|----------------|---------|-----------|------------------------|
| Fluoride_Vinyl chloride_75-01-4 | 1.45                 | 1           | W101-03C | W101-03C_W101-03C-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-02B | W101-02B_W101-02B-EBT-14_20131109 | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-11_20130806     | 8/6/2014    | 8/6/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W101-03C | W101-03C_W101-03C-EBT-13_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-16_20140508     | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-17_20130816 | 8/16/2013   | 8/16/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-15_20140207     | 2/7/2014    | 2/7/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-4    | DR1-4_DR1-4-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-14_20131110 | 11/10/2013  | 11/10/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | DR1-5    | DR1-5_DR1-5-EBT-12_20130512       | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-14_20131109     | 11/9/2013   | 11/9/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-5    | DR1-5_DR1-5-L-S-23_20160424       | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.479                | 1           | DR1-5A   | DR1-5A_DR1-5A-EBT-13_20130820     | 8/20/2013   | 8/20/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-16_20140508 | 5/8/2014    | 5/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-12_20130511     | 5/11/2013   | 5/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | DR1-5    | DR1-5_DR1-5-EBT-11_20130206       | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | UJ        | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-03C | W101-03C_W101-03C-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | DR1-5A   | DR1-5A_DR1-5A-EBT-11_20130206     | 2/6/2013    | 2/6/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-03A | W101-03A_W101-03A-EBT-12_20130512 | 5/12/2013   | 5/12/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W101-03A | W101-03A_W101-03A-EBT-15_20140209 | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-2    | DR1-2_DR1-2-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 22.2                 | 1           | DR2-6    | DR2-6_DR2-6-LB-24_20161015        | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-2    | DR1-2_DR1-2-LB-20_20141018        | 10/18/2014  | 10/18/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.994                | 1           | DR2-6    | DR2-6_DR2-6-L-S-15_20120423       | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-8    | DR1-8_DR1-8-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1                    | 1           | DR2-6    | DR2-6_DR2-6-L-S-17_20130410       | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | W101-04A | W101-04A_W101-04A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | UJ        | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 4.4                  | 1           | DR2-6    | DR2-6_DR2-6-L-S-23_20160422       | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 16.8                 | 1           | DR2-6    | DR2-6_DR2-6-LB-20_20121021        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | W101-04A | W101-04A_W101-04A-EBT-17_20140809 | 8/9/2014    | 8/9/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-24_20161014        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.43                 | 1           | DR2-6    | DR2-6_DR2-6-L-S-19_20140424       | 4/24/2014   | 4/24/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-20_20141019        | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.14                 | 1           | DR2-6    | DR2-6_DR2-6-L-S-21_20121021       | 11/21/2012  | 11/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-7    | DR1-7_DR1-7-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | W101-02B | W101-02B_W101-02B-EBT-15_20140208 | 2/8/2014    | 2/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 13.1                 | 1           | DR1-8    | DR1-8_DR1-8-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 7.52                 | 1           | DR2-6    | DR2-6_DR2-6-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-5    | DR2-5_DR2-5-L-S-15_20120420       | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-1    | DR2-1_DR2-1-L-S-17_20130410       | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-5    | DR2-5_DR2-5-L-S-23_20160421       | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-1    | DR2-1_DR2-1-L-S-15_20120423       | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-1A   | DR1-1A_DR1-1A-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W101-04B | W101-04B_W101-04B-EBT-17_20130818 | 8/18/2013   | 8/18/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-2    | DR1-2_DR1-2-LB-24_20161018        | 10/18/2016  | 10/18/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 12.5                 | 0           | DR2-5    | DR2-5_DR2-5-L-S-25_20170422       | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 12.5                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-04B | W101-04B_W101-04B-EBT-11_20130209 | 2/9/2013    | 2/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 0.317                | 1           | DR2-1    | DR2-1_DR2-1-LB-20_20141020        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-2    | DR1-2_DR1-2-LB-24_20161018        | 10/18/2016  | 10/18/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-1    | DR2-1_DR2-1-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-2    | DR1-2_DR1-2-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | W101-04B | W101-04B_W101-04B-EBT-12_20130513 | 5/13/2013   | 5/13/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 1.31                 | 1           | DR1-8    | DR1-8_DR1-8-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-1    | DR2-1_DR2-1-LA-22_20151006        | 10/6/2015   | 10/6/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR2-1    | DR2-1_DR2-1-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-2    | DR1-2_DR1-2-LB-16_20121019        | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-3    | DR1-3_DR1-3-LA-18_20131012        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.76                 | 1           | DR1-2    | DR1-2_DR1-2-LB-16_20121021        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-3    | DR1-3_DR1-3-L-S-21_20150408       | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 2.5                  | 0           | DR1-6A   | DR1-6A_DR1-6A-L-S-23_20160424     | 4/24/2016   | 4/24/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 2.5                    |
| Fluoride_Vinyl chloride_75-01-4 | 1.25                 | 0           | W101-02A | W101-02A_W101-02A-EBT-17_20140808 | 8/8/2014    | 8/8/2014      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.25                 | 0           | DR1-3    | DR1-3_DR1-3-LB-24_20161018        | 10/18/2016  | 10/18/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| Fluoride_Vinyl chloride_75-01-4 | 0.312                | 1           | DR1-6A   | DR1-6A_DR1-6A-EBT-15_20140209     | 2/9/2014    | 2/9/2014      | 8260B/5030B/5030C/50 | T      | VOC</      |                |         |           |                        |

TABLE B.4  
PROJECT 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                          | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                      | CASRN   | Qualifier | Detection Limit (ug/L) |
|---------------------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|---------------------------|---------|-----------|------------------------|
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-203A  | MW-203A, MW-203A-LB-16, 20120121  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-205A  | MW-205A, MW-205A-LB-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-107T  | MW-107T, MW-107T-LB-20, 20140425  | 4/20/2012   | 4/20/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-107T  | MW-107T, MW-107T-LB-19, 20140425  | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-108   | MW-108, MW-108-LB-15, 20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202A  | MW-202A, MW-202A-LB-25, 20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-107B  | MW-107B, MW-107B-LB-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202A  | MW-202A, MW-202A-LA-18, 20130111  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-107T  | MW-107T, MW-107T-LB-23, 20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-197A  | MW-197A, MW-197A-LB-20, 20140425  | 4/25/2016   | 4/25/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202B  | MW-202B, MW-202B-LB-24, 20160103  | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-199A  | MW-199A, MW-199A-LA-18, 20130111  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202B  | MW-202B, MW-202B-LB-19, 20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-141   | MW-141, MW-141-LA-22, 20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202A  | MW-202A, MW-202A-LB-20, 20140425  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-197A  | MW-197A, MW-197A-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-108   | MW-108, MW-108-LB-19, 20140425    | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-199A  | MW-199A, MW-199A-LB-20, 20140109  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-107T  | MW-107T, MW-107T-LB-21, 20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202B  | MW-202B, MW-202B-LB-20, 20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-197A  | MW-197A, MW-197A-LB-25, 20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 2                    | 0           | MW-203A  | MW-203A, MW-203A-EBT-16, 20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | UJ        | 2                      |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.5                  | 0           | MW-108   | MW-108, MW-108-LB-17, 20130411    | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202B  | MW-202B, MW-202B-LB-19, 20140109  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.5                  | 0           | MW-202B  | MW-202B, MW-202B-LB-17, 20130411  | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-197A  | MW-197A, MW-197A-EBT-13, 20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202B  | MW-202B, MW-202B-LA-18, 20130111  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-202A  | MW-202A, MW-202A-LB-20, 20140425  | 10/8/2014   | 10/8/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-108   | MW-108, MW-108-LB-24, 20160104    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-141   | MW-141, MW-141-LB-25, 20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-197A  | MW-197A, MW-197A-EBT-11, 20130208 | 2/8/2013    | 2/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-197A  | MW-197A, MW-197A-LB-21, 20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-210A  | MW-210A, MW-210A-LB-20, 20140120  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-253   | MW-253, MW-253-LB-20, 20140109    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-215A  | MW-215A, MW-215A-LB-22, 20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-209A  | MW-209A, MW-209A-LB-25, 20170420  | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-209A  | MW-209A, MW-209A-LB-21, 20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-207A  | MW-207A, MW-207A-LB-16, 20120121  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-208A  | MW-208A, MW-208A-LB-17, 20130401  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.225                | 1           | MW-215A  | MW-215A, MW-215A-LB-24, 20160104  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | J         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-252   | MW-252, MW-252-LB-21, 20160101    | 1/30/2016   | 1/30/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | J         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-210A  | MW-210A, MW-210A-LB-16, 20120120  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.5                  | 0           | MW-253   | MW-253, MW-253-LB-17, 20130411    | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.5                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-211   | MW-211, MW-211-LB-24, 20160101    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.236                | 1           | MW-214B  | MW-214B, MW-214B-LB-20, 20140101  | 10/1/2014   | 10/1/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | J         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-210A  | MW-210A, MW-210A-LB-22, 20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-209A  | MW-209A, MW-209A-LB-20, 20140109  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-211   | MW-211, MW-211-LA-22, 20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-252   | MW-252, MW-252-LB-19, 20140425    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-214A  | MW-214A, MW-214A-LB-24, 20160104  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-208A  | MW-208A, MW-208A-LB-25, 20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-209A  | MW-209A, MW-209A-LB-16, 20120120  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-208A  | MW-208A, MW-208A-LB-24, 20160104  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-208A  | MW-208A, MW-208A-LB-23, 20160421  | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.283                | 1           | MW-214B  | MW-214B, MW-214B-LA-22, 20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | J         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-211   | MW-211, MW-211-LA-18, 20130102    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-214B  | MW-214B, MW-214B-LB-20, 20140101  | 10/1/2014   | 10/1/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-252   | MW-252, MW-252-LA-18, 20130102    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-209A  | MW-209A, MW-209A-LB-21, 20150409  | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 | U         | 0.2                    |
| JUC 1,1,2,2-Tetrachloroethane 79-34-5 | 0.2                  | 0           | MW-210A  | MW-210A, MW-210A-LB-24, 20160104  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5 |           |                        |



TABLE B.4  
PROJECT 1.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                      | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                 | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|----------------------|--------|------------|----------------------|---------|-----------|------------------------|
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-15_20140419 | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-197A  | MW-197A_MW-197A-EBT-12_20130611 | 5/11/2017   | 5/11/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-197A  | MW-197A_MW-197A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-199A  | MW-199A_MW-199A-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-199A  | MW-199A_MW-199A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LA-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-141   | MW-141_MW-141-LA-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.447                | 1           | MW-202B  | MW-202B_MW-202B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.417                | 1           | MW-202B  | MW-202B_MW-202B-LA-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-202A  | MW-202A_MW-202A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.402                | 1           | MW-107T  | MW-107T_MW-107T-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-197A  | MW-197A_MW-197A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-202A  | MW-202A_MW-202A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.445                | 1           | MW-202A  | MW-202A_MW-202A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.323                | 1           | MW-108   | MW-108_MW-108-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.379                | 1           | MW-107T  | MW-107T_MW-107T-LA-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.364                | 1           | MW-202B  | MW-202B_MW-202B-LA-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.607                | 1           | MW-202B  | MW-202B_MW-202B-LA-17_20130411  | 4/8/2016    | 4/8/2016      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-141   | MW-141_MW-141-LA-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.501                | 1           | MW-202B  | MW-202B_MW-202B-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 1.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-108   | MW-108_MW-108-LB-10_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LA-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 1                    | 0           | MW-108   | MW-108_MW-108-LA-17_20130411    | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1                      |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.297                | 1           | MW-202B  | MW-202B_MW-202B-LA-18_20131021  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.561                | 1           | MW-202B  | MW-202B_MW-202B-LA-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-199A  | MW-199A_MW-199A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LA-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-197A  | MW-197A_MW-197A-EBT-11_20131021 | 10/21/2013  | 10/21/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 1.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 1.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-197A  | MW-197A_MW-197A-LA-15_20120420  | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-202A  | MW-202A_MW-202A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-108   | MW-108_MW-108-LA-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.21                 | 1           | MW-141   | MW-141_MW-141-LA-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.26                 | 1           | MW-107T  | MW-107T_MW-107T-LA-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.66                 | 1           | MW-107T  | MW-107T_MW-107T-LA-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-108   | MW-108_MW-108-LB-20_20141020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.353                | 1           | MW-202B  | MW-202B_MW-202B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.718                | 1           | MW-107T  | MW-107T_MW-107T-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.945                | 1           | MW-202B  | MW-202B_MW-202B-LA-17_20130411  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-197A  | MW-197A_MW-197A-EBT-17_20130810 | 8/10/2013   | 8/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-141   | MW-141_MW-141-LA-19_20140426    | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-203A  | MW-203A_MW-203A-LA-23_20160425  | 4/25/2016   | 4/25/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 5                    | 0           | MW-203A  | MW-203A_MW-203A-EBT-12_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-205A  | MW-205A_MW-205A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-199A  | MW-199A_MW-199A-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-108   | MW-108_MW-108-LA-18_20131011    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.902                | 1           | MW-214B  | MW-214B_MW-214B-LB-20_20141021  | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.877                | 1           | MW-214A  | MW-214A_MW-214A-LA-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-252   | MW-252_MW-252-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.958                | 1           | MW-215A  | MW-215A_MW-215A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LA-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-211   | MW-211_MW-211-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.767                | 1           | MW-214B  | MW-214B_MW-214B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LA-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 0.978                | 1           | MW-215A  | MW-215A_MW-215A-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 0.25                 | 0           | MW-210A  | MW-210A_MW-210A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | U         | 2.5                    |
| JUC_Carbon tetrachloride, 56-23-5 | 1.1                  | 1           | MW-214A  | MW-214A_MW-214A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride | 56-23-5 | J         | 0.25                   |
| JUC_Carbon tetrachloride, 56-23-5 | 1.02                 | 1           | MW-214A  |                                 |             |               |                      |        |            |                      |         |           |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group           | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC       | CASRN   | Qualifier | Detection Limit (ug/L) |
|------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|----------------------|--------|------------|------------|---------|-----------|------------------------|
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.206                | 1           | MW-202A  | MW-202A_MW-202A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.427                | 1           | MW-202B  | MW-202B_MW-202B-LB-22_20151008  | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 3.68                 | 1           | MW-108   | MW-108_MW-108-LB-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-199A  | MW-199A_MW-199A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.538                | 1           | MW-202B  | MW-202B_MW-202B-LB-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.231                | 1           | MW-202A  | MW-202A_MW-202A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.169                | 1           | MW-202A  | MW-202A_MW-202A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.578                | 1           | MW-202B  | MW-202B_MW-202B-LB-21_20150408  | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.625                | 0           | MW-203A  | MW-203A_MW-203A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-199A  | MW-199A_MW-199A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.192                | 1           | MW-107B  | MW-107B_MW-107B-LB-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-199A  | MW-199A_MW-199A-LB-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-199A  | MW-199A_MW-199A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.516                | 1           | MW-202B  | MW-202B_MW-202B-LB-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 2.42                 | 1           | MW-141   | MW-141_MW-141-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-203A  | MW-203A_MW-203A-LB-24_20150106  | 1/6/2016    | 1/6/2016      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.294                | 1           | MW-107T  | MW-107T_MW-107T-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 8.56                 | 1           | MW-108   | MW-108_MW-108-LB-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 3.13                 | 1           | MW-141   | MW-141_MW-141-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-203A  | MW-203A_MW-203A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 3.04                 | 1           | MW-141   | MW-141_MW-141-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 1.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| JUC_Chloroform_67-66-3 | 0.23                 | 1           | MW-202A  | MW-202A_MW-202A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 2.71                 | 1           | MW-141   | MW-141_MW-141-LA-22_20151009    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 6.6                  | 1           | MW-108   | MW-108_MW-108-LB-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 1.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| JUC_Chloroform_67-66-3 | 3.36                 | 1           | MW-141   | MW-141_MW-141-LB-21_20130611    | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 1.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | UJ        | 1.25                   |
| JUC_Chloroform_67-66-3 | 0.391                | 1           | MW-107T  | MW-107T_MW-107T-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 1.25                 | 0           | MW-203A  | MW-203A_MW-203A-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 1.25                   |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.024                | 0           | MW-203A  | MW-203A_MW-203A-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.025                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-197A  | MW-197A_MW-197A-LB-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.227                | 1           | MW-107T  | MW-107T_MW-107T-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-197A  | MW-197A_MW-197A-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.147                | 1           | MW-197A  | MW-197A_MW-197A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.284                | 1           | MW-203A  | MW-203A_MW-203A-LB-15_20120420  | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.534                | 1           | MW-202B  | MW-202B_MW-202B-LB-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | 0.3       |                        |
| JUC_Chloroform_67-66-3 | 8.86                 | 1           | MW-108   | MW-108_MW-108-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-24_20150409  | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.193                | 1           | MW-202A  | MW-202A_MW-202A-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.264                | 1           | MW-107T  | MW-107T_MW-107T-LB-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-197A  | MW-197A_MW-197A-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 5.41                 | 1           | MW-108   | MW-108_MW-108-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.564                | 1           | MW-202B  | MW-202B_MW-202B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-205A  | MW-205A_MW-205A-LB-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 2.11                 | 1           | MW-141   | MW-141_MW-141-LB-22_20151009    | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 10.1                 | 1           | MW-108   | MW-108_MW-108-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.227                | 1           | MW-107T  | MW-107T_MW-107T-LB-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-197A  | MW-197A_MW-197A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-203A  | MW-203A_MW-203A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.539                | 1           | MW-202B  | MW-202B_MW-202B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.195                | 1           | MW-107T  | MW-107T_MW-107T-LB-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.606                | 1           | MW-202B  | MW-202B_MW-202B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.138                | 1           | MW-197A  | MW-197A_MW-197A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | J         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-197A  | MW-197A_MW-197A-EBT-12_20130208 | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 10.7                 | 1           | MW-108   | MW-108_MW-108-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 9.41                 | 1           | MW-108   | MW-108_MW-108-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.573                | 1           | MW-202B  | MW-202B_MW-202B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform | 67-66-3 | U         | 0.125                  |
| JUC_Chloroform_67-66-3 | 0.125                | 0           | MW-199A  | MW-199A_MW-199A-LB-24_20161013  | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030     |        |            |            |         |           |                        |



TABLE B.4  
PROJUL 5.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                        | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                      | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                   | CASRN    | Qualifier | Detection Limit (µg/L) |
|-------------------------------------|----------------------|-------------|----------|--------------------------------|-------------|---------------|---------------------|--------|------------|------------------------|----------|-----------|------------------------|
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107B  | MW-107B_MW107B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107B  | MW-107B_MW107B-LS-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LB-16_20120422  | 4/22/2012   | 4/22/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 13.7                 | 1           | MW-203A  | MW-203A_MW203A-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 2.5                    |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.252                | 1           | MW-141   | MW-141_MW141-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-202A  | MW-202A_MW202A-LS-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 3.8                  | 1           | MW-205A  | MW-205A_MW205A-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-141   | MW-141_MW141-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.76                 | 1           | MW-197A  | MW-197A_MW197A-EBT-15_20140210 | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-141   | MW-141_MW141-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.54                 | 1           | MW-203A  | MW-203A_MW203A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 9.21                 | 1           | MW-205A  | MW-205A_MW205A-LS-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-141   | MW-141_MW141-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-202B  | MW-202B_MW202B-LS-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.851                | 1           | MW-108   | MW-108_MW108-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-202A  | MW-202A_MW202A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-141   | MW-141_MW141-LS-21_20150410    | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-199A  | MW-199A_MW199A-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.69                 | 1           | MW-202B  | MW-202B_MW202B-LS-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-197A  | MW-197A_MW197A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LA-24_20161018  | 10/12/2017  | 10/12/2017    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.798                | 1           | MW-197A  | MW-197A_MW197A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.278                | 1           | MW-202B  | MW-202B_MW202B-LS-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.596                | 1           | MW-108   | MW-108_MW108-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 10.8                 | 1           | MW-203A  | MW-203A_MW203A-EBT-11_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-141   | MW-141_MW141-LA-18_20131011    | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-199A  | MW-199A_MW199A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.332                | 1           | MW-202B  | MW-202B_MW202B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-202A  | MW-202A_MW202A-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.474                | 1           | MW-108   | MW-108_MW108-LS-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 4.53                 | 1           | MW-205A  | MW-205A_MW205A-LS-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 4.69                 | 1           | MW-205A  | MW-205A_MW205A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.79                 | 1           | MW-197A  | MW-197A_MW197A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LS-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.736                | 1           | MW-197A  | MW-197A_MW197A-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-199A  | MW-199A_MW199A-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.927                | 1           | MW-108   | MW-108_MW108-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-202A  | MW-202A_MW202A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 3.42                 | 1           | MW-205A  | MW-205A_MW205A-LS-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 14.1                 | 1           | MW-203A  | MW-203A_MW203A-EBT-16_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| JUC cis-1,2-Dichloroethene_156-59-2 | 1.65                 | 1           | MW-205A  | MW-205A_MW205A-LB-20_20141020  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 27.6                 | 1           | MW-203A  | MW-203A_MW203A-LS-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.31                 | 1           | MW-202B  | MW-202B_MW202B-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 3.53                 | 1           | MW-205A  | MW-205A_MW205A-LS-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 15.2                 | 1           | MW-203A  | MW-203A_MW203A-LB-24_20161018  | 10/18/2016  | 10/18/2016    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.764                | 1           | MW-108   | MW-108_MW108-LS-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 11.4                 | 1           | MW-203A  | MW-203A_MW203A-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 2.5                    |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.842                | 1           | MW-108   | MW-108_MW108-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.771                | 1           | MW-197A  | MW-197A_MW197A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.279                | 1           | MW-141   | MW-141_MW141-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-107T  | MW-107T_MW107T-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.659                | 1           | MW-197A  | MW-197A_MW197A-LS-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.401                | 1           | MW-202B  | MW-202B_MW202B-LS-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 12.1                 | 1           | MW-203A  | MW-203A_MW203A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-202B  | MW-202B_MW202B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.379                | 1           | MW-202B  | MW-202B_MW202B-LS-17_20130411  | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | J         | 1                      |
| JUC cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-199A  | MW-199A_MW199A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene | 156-59-2 | U         | 0.25                   |
| JUC cis-1,2-Dichloroethene_156-59-2 | 1.48                 | 1           | MW-205A  | MW-205A_MW205A-LS-21_20150410  | 4/10/20     |               |                     |        |            |                        |          |           |                        |

TABLE B.4  
PROJULIS RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJULIS software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| PROJULIS Group                      | ProCUL Result (ug/L) | ProCUL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                             | CASRN    | Qualifier | Detection Limit (ug/L) |
|-------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|----------------------|--------|------------|----------------------------------|----------|-----------|------------------------|
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.341                | 1           | MW-90    | MW-90_MW-90-L5-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-89    | MW-89_MW-89-LB-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.418                | 1           | MW-90    | MW-90_MW-90-L5-25_20150401      | 4/9/2015    | 4/9/2015      | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.384                | 1           | MW-90    | MW-90_MW-90-L5-17_20130410      | 4/10/2013   | 4/10/2013     | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-89    | MW-89_MW-89-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.344                | 1           | MW-90    | MW-90_MW-90-L5-19_20140426      | 4/26/2014   | 4/26/2014     | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.34                 | 1           | MW-90    | MW-90_MW-90-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-89    | MW-89_MW-89-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.428                | 1           | MW-90    | MW-90_MW-90-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-89    | MW-89_MW-89-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.267                | 1           | MW-90    | MW-90_MW-90-L5-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.375                | 1           | MW-90    | MW-90_MW-90-L5-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethene_156-59-2 | 0.25                 | 0           | MW-89    | MW-89_MW-89-L5-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B05030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethene           | 156-59-2 | J         | 0.25                   |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-L5-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | UJ        | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-LA-18_20131022   | 10/12/2013  | 10/12/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-L5-19_20140426   | 4/25/2014   | 4/25/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 10                   | 0           | MW-107B  | MW-107B_MW107B-L5-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 10                     |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-LB-22_20151020   | 10/20/2015  | 10/20/2015    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-L5-25_20170420   | 4/20/2017   | 4/20/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107B  | MW-107B_MW107B-L5-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-LB-15_20121020  | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2690                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 62.5                   |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107T  | MW-107T_MW-107T-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-108   | MW-108_MW108-LB-20_20141020     | 10/20/2014  | 10/20/2014    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107T  | MW-107T_MW-107T-LA-22_20151008  | 10/12/2015  | 10/12/2015    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-197A  | MW-197A_MW-197A-EBT-17_20140810 | 8/10/2014   | 8/10/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202B  | MW-202B_MW-202B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202B  | MW-202B_MW-202B-L5-23_20160423  | 4/23/2016   | 4/23/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-108   | MW-108_MW-108-LB-16_20121021    | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202A  | MW-202A_MW-202A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202B  | MW-202B_MW-202B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-199A  | MW-199A_MW-199A-LA-22_20151007  | 10/7/2015   | 10/7/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2640                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-16_20130509 | 5/10/2013   | 5/10/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-197A  | MW-197A_MW-197A-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107T  | MW-107T_MW-107T-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-141   | MW-141_MW-141-L5-21_20121021    | 4/9/2012    | 4/9/2012      | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-LB-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-108   | MW-108_MW-108-L5-21_20151008    | 10/8/2015   | 10/8/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107T  | MW-107T_MW107T-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 1470                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-14_20131107 | 11/7/2013   | 11/7/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 12.5                   |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202B  | MW-202B_MW-202B-L5-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-L5-19_20140426  | 4/25/2014   | 4/25/2014     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 1090                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-12_20130509 | 5/9/2013    | 5/9/2013      | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 50                     |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-199A  | MW-199A_MW-199A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-197A  | MW-197A_MW-197A-EBT-11_20130208 | 2/8/2013    | 2/8/2013      | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-205A  | MW-205A_MW-205A-L5-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-108   | MW-108_MW-108-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202B  | MW-202B_MW-202B-LA-22_20151008  | 10/11/2013  | 10/11/2013    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-197A  | MW-197A_MW-197A-EBT-12_20130511 | 5/11/2013   | 5/11/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2910                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-15_20130509 | 5/10/2013   | 5/10/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-203A  | MW-203A_MW-203A-L5-23_20160423  | 4/25/2016   | 4/25/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-202A  | MW-202A_MW-202A-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 453                  | 1           | MW-203A  | MW-203A_MW-203A-EBT-13_20130819 | 8/19/2013   | 8/19/2013     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 12.5                   |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-107T  | MW-107T_MW-107T-L5-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-197A  | MW-197A_MW-197A-LB-20_20141020  | 10/21/2014  | 10/21/2014    | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-197A  | MW-197A_MW-197A-L5-25_20170419  | 4/19/2017   | 4/19/2017     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.5                  | 0           | MW-203A  | MW-203A_MW-203A-L5-15_20120420  | 4/20/2012   | 4/20/2012     | 8260B05030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3        | 2.                   |             |          |                                 |             |               |                      |        |            |                                  |          |           |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Notes:  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                   | ProUCL Result (µg/L) | ProUCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method | T or D | COPC Group | COPC                             | CASRN    | Qualifier | Detection Limit (µg/L) |
|--------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|-------------------|--------|------------|----------------------------------|----------|-----------|------------------------|
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-262   | MW-262_MW-262-LS-23_2010423     | 4/23/2016   | 4/23/2016     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-256   | MW-256_MW-256-LS-15_2010426     | 4/26/2014   | 4/26/2014     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-39A   | MW-39A_MW-39A-LS-23_2010425     | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-39A   | MW-39A_MW-39A-LS-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 10                   | 0           | MW-256   | MW-256_MW-256-LS-17_20130411    | 4/11/2013   | 4/11/2013     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 10                     |
| JUC_MEK (2-Butanone)_78-93-3   | 3.52                 | 1           | MW-264   | MW-264_MW-264-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | J         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-264   | MW-264_MW-264-LS-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-39A   | MW-39A_MW-39A-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-256   | MW-256_MW-256-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-256   | MW-256_MW-256-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-256   | MW-256_MW-256-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-262   | MW-262_MW-262-LS-23_2010423     | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-39A   | MW-39A_MW-39A-LA-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-39A   | MW-39A_MW-39A-LS-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-39A   | MW-39A_MW-39A-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | UJ        | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-256   | MW-256_MW-256-LB-16_20121013    | 10/13/2012  | 10/13/2012    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-262   | MW-262_MW-262-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-89    | MW-89_MW-89-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW90-LB-20_20141019       | 4/9/2015    | 4/9/2015      | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | UJ        | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW90-LB-20_20141019       | 4/9/2015    | 4/9/2015      | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LS-17_20130410      | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-89    | MW-89_MW-89-LS-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LS-19_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LA-18_20131012      | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW90-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LS-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW90-LB-20_20141019       | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | UJ        | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LB-16_20121013      | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-90    | MW-90_MW-90-LS-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-89    | MW-89_MW89-LA-22_20151007       | 10/7/2015   | 10/7/2015     | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | UJ        | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-89    | MW-89_MW-89-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_MEK (2-Butanone)_78-93-3   | 2.5                  | 0           | MW-89    | MW-89_MW-89-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B5030C50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | U         | 2.5                    |
| JUC_Tetrachloroethene_127-18-4 | 25.1                 | 1           | MW-107B  | MW-107B_MW-107B-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | J         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 20.3                 | 1           | MW-107B  | MW-107B_MW-107B-LB-16_20121021  | 4/11/2013   | 4/11/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 61.9                 | 1           | MW-107B  | MW-107B_MW-107B-LB-20_20141021  | 10/21/2014  | 10/21/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 9.09                 | 1           | MW-107B  | MW-107B_MW-107B-LS-19_20140425  | 4/25/2014   | 4/25/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 6.31                 | 1           | MW-107B  | MW-107B_MW-107B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 15.4                 | 1           | MW-107B  | MW-107B_MW-107B-LS-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 46.1                 | 1           | MW-107B  | MW-107B_MW-107B-LA-22_20151007  | 10/8/2015   | 10/8/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 62.5                 | 1           | MW-107B  | MW-107B_MW-107B-LS-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 46.5                 | 1           | MW-107B  | MW-107B_MW-107B-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 38.5                 | 1           | MW-107B  | MW-107B_MW-107B-LS-23_20160422  | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 5.16                 | 1           | MW-202A  | MW-202A_MW-202A-LS-25_20170421  | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 34.3                 | 1           | MW-141   | MW-141_MW-141-LS-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.523                | 1           | MW-203A  | MW-203A_MW-203A-LB-24_20161016  | 10/16/2016  | 10/16/2016    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | J         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 21.3                 | 1           | MW-202B  | MW-202B_MW-202B-LB-16_20121020  | 10/20/2012  | 10/20/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 30.4                 | 1           | MW-141   | MW-141_MW-141-LS-23_20160422    | 4/23/2016   | 4/23/2016     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 27                   | 1           | MW-205A  | MW-205A_MW-205A-LS-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 20.6                 | 1           | MW-197A  | MW-197A_MW-197A-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 32.1                 | 1           | MW-202B  | MW-202B_MW-202B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 3.25                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-15_20140510 | 5/10/2014   | 5/10/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | J         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 36.5                 | 1           | MW-107T  | MW-107T_MW-107T-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 7.85                 | 1           | MW-108   | MW-108_MW-108-LS-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 4.01                 | 1           | MW-108   | MW-108_MW-108-LS-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 13.4                 | 1           | MW-205A  | MW-205A_MW-205A-LB-16_20121021  | 4/22/2016   | 4/22/2016     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 31                   | 1           | MW-197A  | MW-197A_MW-197A-LS-15_20120423  | 4/20/2012   | 4/20/2012     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 2.62                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-18_20141109 | 11/9/2014   | 11/9/2014     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | J         | 2.5                    |
| JUC_Tetrachloroethene_127-18-4 | 31.7                 | 1           | MW-141   | MW-141_MW-141-LS-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 118                  | 1           | MW-203A  | MW-203A_MW-203A-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 6.52                 | 1           | MW-107T  | MW-107T_MW-107T-LB-20_20141021  | 10/21/2014  | 10/21/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 82.3                 | 1           | MW-107T  | MW-107T_MW-107T-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 25.5                 | 1           | MW-202B  | MW-202B_MW-202B-LA-18_20131011  | 10/11/2013  | 10/11/2013    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-199A  | MW-199A_MW-199A-LB-20_20141019  | 10/19/2014  | 10/19/2014    | 8260B5030B5030C50 | T      | VOC        | Tetrachloroethene (PCE)          | 127-1    |           |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProJCL Group                   | ProJCL Result (ug/L) | ProJCL Flag | Location | Sample ID                       | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                      | CASRN    | Qualifier | Detection Limit (ug/L) |
|--------------------------------|----------------------|-------------|----------|---------------------------------|-------------|---------------|---------------------|--------|------------|---------------------------|----------|-----------|------------------------|
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LS-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 43.5                 | 1           | MW-256   | MW-256_MW-256-LB-19_20140426    | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LS-23_20160422    | 7/23/2016   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 33.9                 | 1           | MW-256   | MW-256_MW-256-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 42.4                 | 1           | MW-256   | MW-256_MW-256-LS-21_20150408    | 4/8/2015    | 4/8/2015      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 37.7                 | 1           | MW-256   | MW-256_MW-256-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | J         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 5.42                 | 1           | MW-39A   | MW-39A_MW-39A-LS-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.591                | 1           | MW-38    | MW-38_MW-38-LB-16_20121021      | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | J         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.262                | 1           | MW-38    | MW-38_MW-38-LB-20_20141021      | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | J         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-SRPHase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LS-25_20170419    | 4/19/2017   | 4/19/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 22.7                 | 1           | MW-39A   | MW-39A_MW-39A-LS-21_20150409    | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LS-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LS-23_20160422    | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 35.8                 | 1           | MW-256   | MW-256_MW-256-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 34.3                 | 1           | MW-256   | MW-256_MW-256-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LS-23_20160421    | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 29.9                 | 1           | MW-39A   | MW-39A_MW-39A-LS-17_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 7.96                 | 1           | MW-39A   | MW-39A_MW-39A-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LB-24_20161015    | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LA-22_20151007    | 10/8/2017   | 10/8/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LA-22_20151007    | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 17.4                 | 1           | MW-39A   | MW-39A_MW-39A-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 27.9                 | 1           | MW-256   | MW-256_MW-256-LS-25_20170421    | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 28.6                 | 1           | MW-256   | MW-256_MW-256-LB-24_20161013    | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 23.5                 | 1           | MW-39A   | MW-39A_MW-39A-LB-20_20141019    | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 30.3                 | 1           | MW-39A   | MW-39A_MW-39A-LB-16_20121021    | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262_20150730          | 7/30/2015   | 7/30/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-SRPHase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 29                   | 1           | MW-39A   | MW-39A_MW-39A-LS-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LS-23_20160423    | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 29.1                 | 1           | MW-39A   | MW-39A_MW-39A-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 39.5                 | 1           | MW-256   | MW-256_MW-256-LB-16_20121019    | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 16.1                 | 1           | MW-90    | MW-90_MW-90-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 4.25                 | 1           | MW-89    | MW-89_MW-89-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 4.99                 | 1           | MW-89    | MW-89_MW-89-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 5.31                 | 1           | MW-89    | MW-89_MW-89-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 2.44                 | 1           | MW-89    | MW-89_MW-89-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 11.8                 | 1           | MW-90    | MW-90_MW-90-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 25.0                 | 1           | MW-90    | MW-90_MW-90-LS-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 6.08                 | 1           | MW-89    | MW-89_MW-89-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 17.7                 | 1           | MW-90    | MW-90_MW-90-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 13.5                 | 1           | MW-90    | MW-90_MW-90-LS-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 18.9                 | 1           | MW-90    | MW-90_MW-90-LS-21_20150409      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 22.4                 | 1           | MW-90    | MW-90_MW-90-LS-17_20130410      | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 3.64                 | 1           | MW-89    | MW-89_MW-89-LS-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 25.6                 | 1           | MW-90    | MW-90_MW-90-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 19.9                 | 1           | MW-90    | MW-90_MW-90-LS-19_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 15.4                 | 1           | MW-90    | MW-90_MW-90-LS-23_20160422      | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Tetrachloroethene_127-18-4 | 21.5                 | 1           | MW-90    | MW-90_MW-90-LA-18_20131011      | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Tetrachloroethylene (PCE) | 127-18-4 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 3.47                 | 1           | MW-107B  | MW-107B_MW-107B-LB-16_20121021  | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 1.60                 | 1           | MW-107B  | MW-107B_MW-107B-LS-19_20140426  | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 1.25                 | 1           | MW-107B  | MW-107B_MW-107B-LS-25_20170420  | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 1.5                  | 1           | MW-107B  | MW-107B_MW-107B-LS-21_20150410  | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 1.66                 | 1           | MW-107B  | MW-107B_MW-107B-LA-22_20151008  | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 1.5                  | 1           | MW-107B  | MW-107B_MW-107B-LB-20_20141020  | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 2.44                 | 1           | MW-107B  | MW-107B_MW-107B-LS-17_20130410  | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 1.78                 | 1           | MW-107B  | MW-107B_MW-107B-LB-24_20161014  | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 2.72                 | 1           | MW-107B  | MW-107B_MW-107B-LA-18_20131012  | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6    | 4.15                 | 1           | MW-107B  | MW-107B_MW-107B-LS-15_20120423  | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethylene (TCE)   | 79-01-6  | U         | 0.25                   |

TABLE B.4  
PROJECT S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

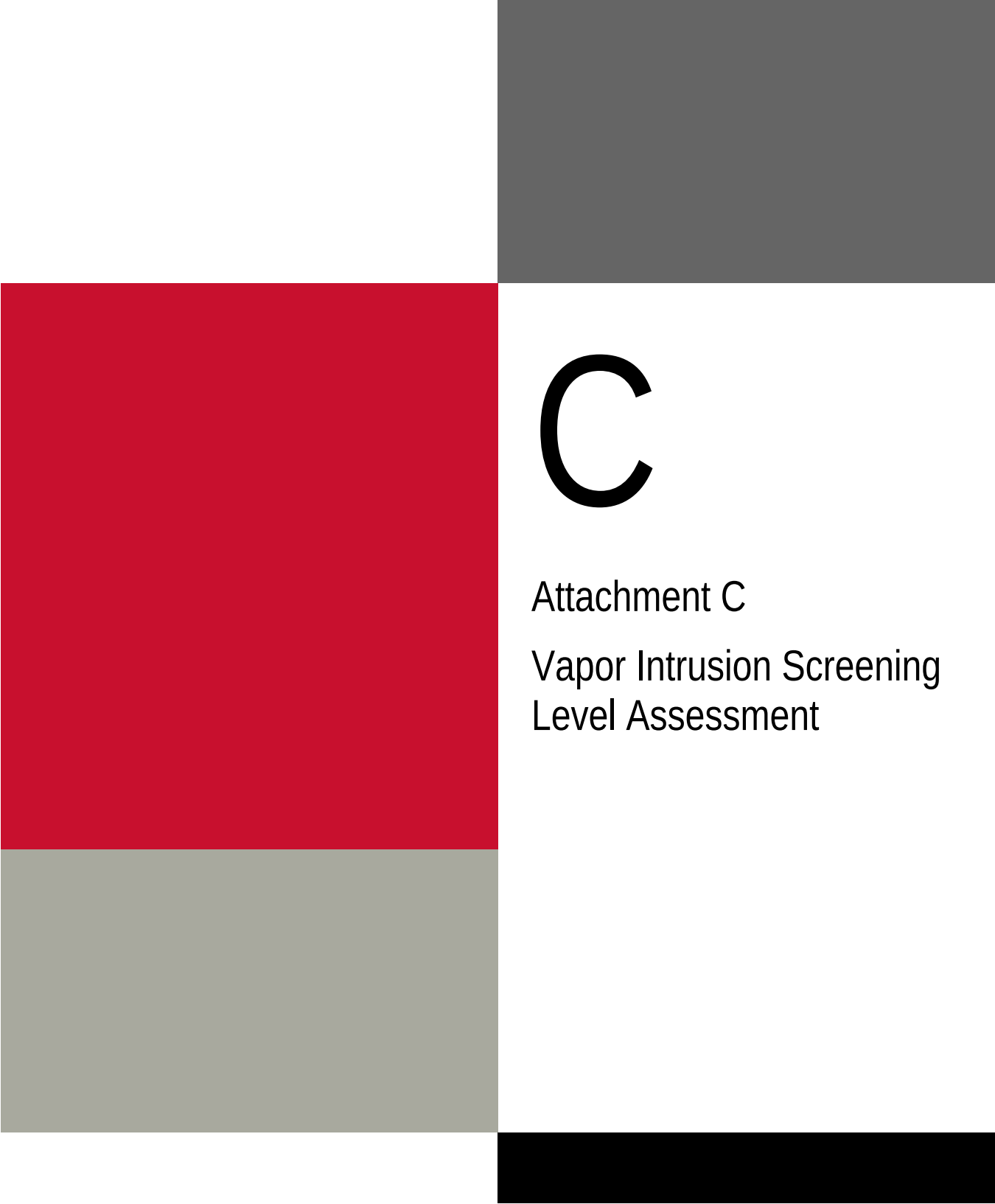
| ProUCL Group                | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                         | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                  | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------|----------------------|-------------|----------|-----------------------------------|-------------|---------------|---------------------|--------|------------|-----------------------|---------|-----------|------------------------|
| JUC_Trichloroethene_79-01-6 | 2.22                 | 1           | MW-215A  | MW-215A_MW-215A-LA-22_20151008    | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 9.51                 | 1           | MW-208A  | MW-208A_MW-208A-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 6.25                 | 1           | MW-210A  | MW-210A_MW-210A-LB-25_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 16.4                 | 1           | MW-208A  | MW-208A_MW-208A-LB-20_20141020    | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 19.6                 | 1           | MW-207A  | MW-207A_MW-207A-LB-25_20170420    | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 34.5                 | 1           | MW-207A  | MW-207A_MW-207A-LB-23_20160422    | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 3.46                 | 1           | MW-215A  | MW-215A_MW-215A-LA-18_20131012    | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 2.69                 | 1           | MW-214A  | MW-214A_MW-214A-LB-15_20120423    | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-253   | MW-253_MW-253-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 2.35                 | 1           | MW-214A  | MW-214A_MW-214A-LB-24_20161014    | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 18.4                 | 1           | MW-208A  | MW-208A_MW-208A-LB-20_20130410    | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 4.62                 | 1           | MW-210A  | MW-210A_MW-210A-LB-16_20121020    | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 1.41                 | 1           | MW-214B  | MW-214B_MW-214B-LB-17_20130411    | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-253   | MW-253_MW-253-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 1.48                 | 1           | MW-38    | MW-38_MW-38-LB-16_20121013        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 13.7                 | 1           | MW-256   | MW-256_MW-256-LB-16_20121019      | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LB-25_20170422      | 4/22/2017   | 4/22/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LB-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-38    | MW-38_MW-38-LB-20_20141021        | 10/21/2014  | 10/21/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LB-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LB-23_20160421      | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 7.68                 | 1           | MW-39A   | MW-39A_MW-39A-LB-24_20161014      | 10/14/2016  | 10/14/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 6.62                 | 1           | MW-39A   | MW-39A_MW-39A-LB-25_20160422      | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 8.69                 | 1           | MW-39A   | MW-39A_MW-39A-LB-21_20150409      | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 7.03                 | 1           | MW-39A   | MW-39A_MW-39A-LB-19_20140425      | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 6.88                 | 1           | MW-39A   | MW-39A_MW-39A-LB-17_20130410      | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 11.6                 | 1           | MW-256   | MW-256_MW-256-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 7.4                  | 1           | MW-39A   | MW-39A_MW-39A-LB-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-38    | MW-38_MW-38-LB-16_20121013        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LB-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 8.01                 | 1           | MW-39A   | MW-39A_MW-39A-LB-20_20141019      | 10/19/2014  | 10/19/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 8.18                 | 1           | MW-39A   | MW-39A_MW-39A-LB-16_20121020      | 10/20/2012  | 10/20/2012    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 7.93                 | 1           | MW-39A   | MW-39A_MW-39A-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 9.89                 | 1           | MW-256   | MW-256_MW-256-LA-22_20130411      | 4/7/2013    | 4/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 7.05                 | 1           | MW-39A   | MW-39A_MW-39A-LA-18_20130111      | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 14                   | 1           | MW-256   | MW-256_MW-256-LA-18_20130112      | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | J         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LA-22_20151008      | 10/8/2015   | 10/8/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 10.3                 | 1           | MW-256   | MW-256_MW-256-LB-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 7.82                 | 1           | MW-256   | MW-256_MW-256-LB-15_20120423      | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LB-23_20160423      | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 12.1                 | 1           | MW-256   | MW-256_MW-256-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 9.77                 | 1           | MW-256   | MW-256_MW-256-LB-25_20170421      | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 6.47                 | 1           | MW-39A   | MW-39A_MW-39A-LB-25_20170420      | 4/20/2017   | 4/20/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LB-20_20141020      | 4/20/2014   | 4/20/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-262   | MW-262_MW-262_20150730            | 7/30/2015   | 7/30/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 8.51                 | 1           | MW-256   | MW-256_MW-256-LB-24_20161013      | 10/13/2016  | 10/13/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LB-24_20161015      | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LB-20_20141020      | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 13.4                 | 1           | MW-256   | MW-256_MW-256-LB-19_20140426      | 4/26/2014   | 4/26/2014     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LA-22_20151007      | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 16                   | 1           | MW-256   | MW-256_MW-256-LB-17_20130411      | 4/11/2013   | 4/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-262   | MW-262_MW-262-SRIPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-273   | MW-273_MW-273_20150731            | 7/31/2015   | 7/31/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 0.25                 | 0           | MW-264   | MW-264_MW-264-SRIPPhase1_20150517 | 5/17/2015   | 5/17/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 4.32                 | 1           | MW-90    | MW-90_MW-90-LB-25_20170421        | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 1.35                 | 1           | MW-89    | MW-89_MW-89-LA-18_20130111        | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 4.87                 | 1           | MW-90    | MW-90_MW-90-LB-23_20160423        | 4/23/2016   | 4/23/2016     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 4.37                 | 1           | MW-90    | MW-90_MW-90-LB-15_20120423        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 5.59                 | 1           | MW-90    | MW-90_MW-90-LB-21_20150409        | 4/9/2015    | 4/9/2015      | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         | 0.25                   |
| JUC_Trichloroethene_79-01-6 | 1.03                 | 1           | MW-89    | MW-89_MW-89-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | Trichloroethene (TCE) | 79-01-6 | U         |                        |

TABLE B.4  
PROJCL S.1 RAW INPUT FOR GROUNDWATER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPT MEMPHIS, TENNESSEE

**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA PROJCL software for the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                        | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC           | CASRN   | Qualifier | Detection Limit (ug/L) |
|-----------------------------|----------------------|-------------|----------|----------------------------------|-------------|---------------|----------------------|--------|------------|----------------|---------|-----------|------------------------|
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-252   | MW-252_MW-252-LS-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-210A  | MW-210A_MW-210A-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-210A  | MW-210A_MW-210A-LS-15_20130410   | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LS-25_20170420   | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214A  | MW-214A_MW-214A-LB-20_20141021   | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.601                | 1           | MW-208A  | MW-208A_MW-208A-LB-20_20141020   | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-208A  | MW-208A_MW-208A-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1                    | 0           | MW-207A  | MW-207A_MW-207A-LS-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1                      |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-208A  | MW-208A_MW-208A-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-210A  | MW-210A_MW-210A-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214B  | MW-214B_MW-214B-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1                    | 0           | MW-253   | MW-253_MW-253-LS-17_20130411     | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1                      |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214B  | MW-214B_MW-214B-LA-18_20131012   | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-210A  | MW-210A_MW-210A-LS-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214A  | MW-214A_MW-214A-LB-16_20121021   | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214B  | MW-214B_MW-214B-LS-17_20130411   | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1                      |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LB-24_20161014   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LS-23_20160422   | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-253   | MW-253_MW-253-LB-16_20121019     | 10/19/2012  | 10/19/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LS-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-253   | MW-253_MW-253-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-209A  | MW-209A_MW-209A-LA-18_20131011   | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214B  | MW-214B_MW-214B-LS-19_20140425   | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214A  | MW-214A_MW-214A-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-252   | MW-252_MW-252-LB-24_20161013     | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-253   | MW-253_MW-253-LB-20_20141019     | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LS-15_20120423   | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-253   | MW-253_MW-253-LS-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214B  | MW-214B_MW-214B-LB-20_20141021   | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214B  | MW-214B_MW-214B-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-211   | MW-211_MW-211-LB-16_20121021     | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-214A  | MW-214A_MW-214A-LS-17_20130411   | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 1                      |
| JUC_Vinyl chloride, 75-01-4 | 1.97                 | 1           | MW-208A  | MW-208A_MW-208A-LB-16_20121020   | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | J         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-210A  | MW-210A_MW-210A-LA-22_20151008   | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-207A  | MW-207A_MW-207A-LS-21_20150410   | 4/10/2015   | 4/10/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.93                 | 1           | MW-39A   | MW-39A_MW-39A-LA-15_20120423     | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 2.01                 | 1           | MW-39A   | MW-39A_MW-39A-LB-24_20161013     | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-256   | MW-256_MW-256-LS-19_20140426     | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LS-23_20160423     | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LS-23_20160422     | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.83                 | 1           | MW-39A   | MW-39A_MW-39A-LB-24_20161013     | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-256   | MW-256_MW-256-LS-21_20150408     | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.16                 | 1           | MW-39A   | MW-39A_MW-39A-LB-24_20161013     | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262-LS-15_20130411     | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.28                 | 1           | MW-39A   | MW-39A_MW-39A-LB-23_20160422     | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.37                 | 1           | MW-39A   | MW-39A_MW-39A-LS-17_20130410     | 4/10/2013   | 4/10/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-LS-23_20160422     | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.49                 | 1           | MW-39A   | MW-39A_MW-39A-LB-19_20140425     | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-256   | MW-256_MW-256-LA-18_20131012     | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LA-22_20151007     | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-256   | MW-256_MW-256-LS-15_20130411     | 4/11/2013   | 4/11/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 1.31                 | 1           | MW-39A   | MW-39A_MW-39A-LS-21_20150409     | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LS-25_20170422     | 4/22/2017   | 4/22/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-38    | MW-38_MW-38-LB-20_20141021       | 10/21/2014  | 10/21/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LB-24_20161013     | 5/17/2016   | 5/17/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LS-23_20160423     | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LA-22_20151008     | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-262   | MW-262_MW-262_20150730           | 7/30/2015   | 7/30/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LB-24_20161015     | 10/15/2016  | 10/15/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-256   | MW-256_MW-256-LB-20_20141019     | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-273   | MW-273_MW-273_20150731           | 7/31/2015   | 7/31/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-268   | MW-268_MW-268-LS-25_20170419     | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-264   | MW-264_MW-264-SIDPHASE1_20150517 | 5/17/2016   | 5/17/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl chloride | 75-01-4 | U         | 0.25                   |
| JUC_Vinyl chloride, 75-01-4 | 0.25                 | 0           | MW-90    | MW-90_MW90-LA-22_20151007        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Vinyl          |         |           |                        |





# C

Attachment C

Vapor Intrusion Screening  
Level Assessment



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# Memorandum

**To:** Laura Roebuck, USACE-Mobile  
Joan Hutton, CALIBRE Systems, Inc.

**From:** Clayton Mokri, Vapor Intrusion Task Manager  
Tom Holmes, Project Manager

**Date:** 18 October 2017

**Re:** **Vapor Intrusion Screening Level Assessment**  
**Main Installation, Defense Distribution Depot, Memphis**

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HDR Environmental, Operations and Construction, Inc. (HDR) has prepared this memorandum to present the screening level assessment of potential vapor intrusion (VI) risk from volatile organic compounds (VOCs) in groundwater beneath the Main Installation (MI) at the former Defense Depot Memphis, Tennessee (DDMT). The assessment utilized the United States Environmental Protection Agency (USEPA) Vapor Intrusion Screening Level Calculator (VISL) and the Johnson and Ettinger (J&E) VI model. This work was performed for the Office of the Assistant Chief of Staff for Installation Management, Base Realignment and Closure Division (ODB) under Contract W91278-16-D-0061, Task Order 0002 with the U.S. Army Corps of Engineers, Mobile District.

## INTRODUCTION

DDMT is located in southeastern Memphis, Tennessee and consists of approximately 632 acres at the MI and Dunn Field. The MI contains approximately 567 acres with open storage areas, warehouses, former military family housing, and outdoor recreational areas. Dunn Field, which is located across Dunn Avenue from the northwest section of the MI, contains approximately 65 acres with former mineral storage and waste disposal areas. Approximately two-thirds of Dunn Field is grassed, and the remaining area is covered with crushed rock and paved surfaces.

From 1942 until closure in 1997, DDMT received, warehoused, and distributed supplies to U.S. military services and civilian agencies. The supplies included hazardous substances; textile products; food products; electronic equipment; construction materials; and industrial, medical, and general supplies. Types of past activities that could have resulted in the presence of hazardous materials in environmental media at the MI include hazardous substance repackaging for storage or shipment, pesticide application, painting and sandblasting, vehicle maintenance and hazardous material handling/storage. These activities resulted in the presence of metals, pesticides, and other less frequently detected chemicals in surface soil, surface water and sediment, and chlorinated volatile organic compounds (CVOCs) in groundwater.

DDMT was placed on the USEPA National Priorities List of contaminated sites in 1992. Numerous remedial investigations and remedial actions have been performed at DDMT resulting in a significant dataset for site lithology and extent of contamination, which is suitable for use in this assessment.



Environmental restoration at the MI includes remedial action and monitoring for specific CVOCs, which are listed as 'primary CVOCs' in site documents, such as *Annual Long-Term Monitoring Report – 2016, Revision 0* (2016 LTM Report) (HDR, 2017). The primary CVOCs consist of tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene, vinyl chloride (VC), carbon tetrachloride (CT) and chloroform (HDR, 2017). All six CVOCs are listed as being sufficiently volatile and toxic to be considered for potential VI risk in Appendix A of the *DoD Vapor Intrusion Handbook* (DoD, 2009), which is taken from USEPA guidance (USEPA530-D-02-004, 2002). The CVOCs are present in groundwater at concentrations up to 300 micrograms per liter (µg/L). The groundwater plumes, and potentially soil contamination, are present beneath commercial/industrial buildings at the site presenting a potential VI risk to current and future building occupants.

## METHODS

### Groundwater Data

As an initial step, HDR prepared a comprehensive vapor intrusion map for the MI ([Figure 1](#)) to show the location of the CVOC plumes, CVOC concentrations at individual wells, groundwater elevation contours, and the locations of existing buildings with the building number and current tenant/owner name. The groundwater elevations and validated analytical results are from the October 2016 sampling event, as presented in *Annual Long-Term Monitoring Report – 2016, Revision 0* (HDR, 2017). The October 2016 analytical results and water level measurements are consistent with historical results.

### Current and Future Land Use

Land use controls have been established for the MI that prevent the construction of residential development or child daycare facilities (CH2MHILL, 2004), except for the eastern parcel depicted on [Figure 1](#), which is available for unrestricted use. Current building tenants or unoccupied buildings, where noted, were identified as documented on the February 2, 2016 site plan, *Memphis Depot Industrial Park, Tenant Locations*. The buildings are used for warehousing and light industrial use. This assessment evaluated the VI risk with commercial exposure assumptions.

### Constituents of Potential Concern and Initial Exposure Assessment

The primary CVOCs detected in monitoring wells on the MI were evaluated to develop the list of constituents of potential concern (COPCs) in [Table 1](#). One of the primary CVOCs for the MI (cis-1,2-dichloroethene) is not included as a COPC because the toxicity data (reference concentration and inhalation unit risk) used to calculate VI screening levels are not established (USEPA, 2017).

To evaluate whether a VI exposure pathway is complete, the COPCs listed above were selected in the VISL calculator to identify a groundwater screening level (SL) protective of the VI risk. VISL (USEPA, 2016) calculated the SL based on commercial land use, groundwater to indoor air attenuation factor of 0.001, 25 degree Celsius average groundwater temperature, Henry's law constant, and the indoor air regional screening level (RSL) with a target cancer risk of  $1 \times 10^{-6}$  and non-cancer hazard index of 1.0 (USEPA, 2017). The calculated SLs are listed in [Table 1](#) and the VISL spreadsheet is included as [Appendix A-1](#).

**Table 1. Groundwater COPCs and Screening Levels**

| COPC                      | Screening Level (µg/L) |
|---------------------------|------------------------|
| Carbon Tetrachloride (CT) | 1.8                    |
| Chloroform                | 3.6                    |
| Tetrachloroethene (PCE)   | 65                     |
| Trichloroethene (TCE)     | 7.4                    |
| Vinyl Chloride (VC)       | 2.5                    |

The October 2016 groundwater analytical results and the SLs were used to identify where groundwater concentrations of COPCs exceed the SLs. Generally, at properties where subsurface concentrations of vapor-forming chemicals (e.g. groundwater or "near source" soil gas concentrations) fall below SLs, no further action or study is warranted (USEPA, 2014). As illustrated on [Figure 1](#), contaminants are present in groundwater greater than SLs and in many cases, are present beneath occupied commercial buildings; therefore, the VI pathway is complete (USEPA, 2015).

## RISK CHARACTERIZATION

Where a complete VI exposure has been identified, preexisting and readily ascertainable data may be compared to recommended generic VI screening criteria to develop insights about the potential level of exposure and risk posed by VI (USEPA, 2015). To further evaluate the VI risk, HDR reviewed October 2016 groundwater analytical results. Wells DR2-1, MW-100B and PMW21-04 were selected as they had the highest concentrations of the most common COPCs (PCE, TCE and VC) among the wells sampled and are located adjacent to occupied buildings.

The VI risk was estimated using the May 2016 VISL Calculator (USEPA, 2016) commercial exposure endpoints, default 25 degree Celsius (C) groundwater temperature, and the COPC concentrations detected in groundwater at the selected wells during the October 2016 sampling (Table 2). To further evaluate the VI risk, the J&E model (USEPA, 2003) incorporated additional site specific information such as depth to water, approximate 22°C groundwater temperature (HDR, 2017), and soil type(s). The VISL and/or J&E model input data used to estimate the potential for VI risk at the MI is presented on Table 2.

**Table 2. Input Parameters**

|                                                | Well DR2-1                   | Well MW-100B                    | Well PMW21-04                  |
|------------------------------------------------|------------------------------|---------------------------------|--------------------------------|
| Depth to Water (feet/centimeters)              | 84.97/2,590                  | 82.87/2,526                     | 83.49/2,545                    |
| Soil Type (depth in feet below ground surface) | Clay (0-30),<br>Sand (26-85) | Clay (0-18.5)<br>Sand (18.5-83) | Clay (0-26),<br>Sand (26-83.5) |
| Chloroform (µg/L)                              | 4.97                         | 0.3 U                           | 0.157                          |
| CT (µg/L)                                      | 32                           | 1.0 U                           | 1.0 U                          |
| PCE (µg/L)                                     | 208                          | 1.09                            | 293                            |
| TCE (µg/L)                                     | 5.92                         | 0.306                           | 122                            |
| VC (µg/L)                                      | 1.0 U                        | 101                             | 1.0 U                          |

The cancer and non-cancer risk from VI of COPCs in groundwater to indoor air were calculated using commercial exposure assumptions, the USEPA's June 2017 unit risk factors and reference concentrations to generate cancer and non-cancer risk estimates (USEPA, 2017). The VISL spreadsheets for each of the selected wells are provided in Appendix A ([A-2](#) to [A-4](#))

and the J&E model results are provided in Appendix B (B-1 to B-3). The calculated risk estimates are presented for wells DR2-1, MW-100B and PMW21-04 in Tables 3, 4, and 5, respectively.

**Table 3. Well DR2-1 VI Risk Results**

| COPC       | Cancer Risk                            |                                        | Non-Cancer Risk |        |
|------------|----------------------------------------|----------------------------------------|-----------------|--------|
|            | VISL                                   | J&E                                    | VISL            | J&E    |
| Chloroform | <b><math>1.4 \times 10^{-6}</math></b> | $2.6 \times 10^{-7}$                   | 0.0017          | 0.0003 |
| CT         | <b><math>1.8 \times 10^{-5}</math></b> | <b><math>2.6 \times 10^{-6}</math></b> | 0.0820          | 0.0120 |
| PCE        | <b><math>3.2 \times 10^{-6}</math></b> | $4.1 \times 10^{-7}$                   | 0.8600          | 0.1100 |
| TCE        | $8 \times 10^{-7}$                     | $5.6 \times 10^{-8}$                   | 0.2700          | 0.0390 |
| VC         | $4.1 \times 10^{-7}$                   | $1.3 \times 10^{-7}$                   | 0.0026          | 0.0007 |
| Total      | <b><math>2.4 \times 10^{-5}</math></b> | <b><math>3.5 \times 10^{-6}</math></b> | <b>1.2163</b>   | 0.1620 |

**Table 4. Well MW-100B Risk Results**

| COPC       | Cancer Risk                            |                                        | Non-Cancer Risk |        |
|------------|----------------------------------------|----------------------------------------|-----------------|--------|
|            | VISL                                   | J&E                                    | VISL            | J&E    |
| Chloroform | $8.4 \times 10^{-8}$                   | $1.6 \times 10^{-8}$                   | 0.0001          | 0.0001 |
| CT         | $5.5 \times 10^{-7}$                   | $8.5 \times 10^{-8}$                   | 0.0026          | 0.0004 |
| PCE        | $1.7 \times 10^{-8}$                   | $2.2 \times 10^{-9}$                   | 0.0045          | 0.0006 |
| TCE        | $4.1 \times 10^{-8}$                   | $3.0 \times 10^{-9}$                   | 0.0140          | 0.0021 |
| VC         | <b><math>4.1 \times 10^{-5}</math></b> | <b><math>7.9 \times 10^{-6}</math></b> | 0.2600          | 0.0500 |
| Total      | <b><math>4.2 \times 10^{-5}</math></b> | <b><math>8.1 \times 10^{-6}</math></b> | 0.2812          | 0.0531 |

**Table 5. Well PMW21-04 VI Risk Results**

| COPC       | Cancer Risk                            |                                        | Non-Cancer Risk |        |
|------------|----------------------------------------|----------------------------------------|-----------------|--------|
|            | VISL                                   | J&E                                    | VISL            | J&E    |
| Chloroform | $4.4 \times 10^{-8}$                   | $8.3 \times 10^{-9}$                   | 0.0001          | 0.0001 |
| CT         | $5.5 \times 10^{-7}$                   | $8.3 \times 10^{-8}$                   | 0.0026          | 0.0004 |
| PCE        | <b><math>4.5 \times 10^{-6}</math></b> | $5.8 \times 10^{-7}$                   | <b>1.2000</b>   | 0.1600 |
| TCE        | <b><math>1.6 \times 10^{-5}</math></b> | <b><math>1.2 \times 10^{-6}</math></b> | <b>5.6000</b>   | 0.8100 |
| VC         | $4.1 \times 10^{-7}$                   | $7.7 \times 10^{-8}$                   | 0.0026          | 0.0005 |
| Total      | <b><math>2.2 \times 10^{-5}</math></b> | <b><math>2.6 \times 10^{-6}</math></b> | <b>6.8053</b>   | 0.971  |

The VISL calculator identified a cumulative cancer risk greater than  $1 \times 10^{-6}$  for one or more individual COPCs and the combined risk at all three wells; a non-cancer risk greater than 1.0 was identified for two individual COPCs at PMW21-04 and for the combined risk at PMW21-04 and DR2-1. The J&E model identified a cumulative cancer risk greater than  $1 \times 10^{-6}$  for one individual COPC and the combined risk at all three wells; a non-cancer risk greater than 1.0 was not identified at these wells.

The cancer and non-cancer risks calculated by VISL are five to ten times greater than the risks calculated with the J&E model. This difference is largely due to the incorporation of site-specific lithological data and depth to contamination in the J&E model to estimate an indoor air concentration rather than the VISL default attenuation factor of 0.001.

While the VISL and J&E models calculated different cancer and non-cancer risks, both methods identified risks greater than the target  $1 \times 10^{-6}$  for cancer (USEPA, 2015); therefore, VOCs are present in the subsurface that may present an unacceptable human health risk from VI. In addition to the VI risk identified at wells PMW21-04, DR2-1 and MW100B, COPCs detected in other wells on the MI may also present a VI risk (Figure 1).

## CONCLUSIONS AND RECOMMENDATIONS

This assessment concludes:

- Chemicals present in groundwater are sufficiently volatile and toxic to pose a potential human health risk from VI to indoor air of current and future buildings;
- Recent analytical results for COPCs in groundwater exceed commercial SLs estimated using the VISL calculator beneath occupied buildings indicating a potential human health risk from VI (Figure 1); and
- October 2016 groundwater analytical results and lithological data for three representative wells (PMW21-04, DR2-1, and MW100B) used with the J&E model provided lower human health risk estimates than with the VISL calculator; the J&E results were an order of magnitude lower for cancer risk and about 50 percent lower for non-cancer risk.

The potential human health risk from COPCs in groundwater within occupied structures at DDMT is greater than  $1 \times 10^{-6}$  for cancer and greater than 1.0 for non-cancer. Soil gas samples will be collected in order to more precisely estimate human health risk. A work plan for soil gas sampling will be prepared in accordance with the statement of Work for Task Order 0002.

## REFERENCES

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USEPA, 2015. *OSWER 9200.2-154, Technical Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to indoor Air*, June.

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USEPA, 2017. *Regional Screening Levels*, <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-june-2017>. June.



Figure



Path: W:\YearReview2017\Figure 01\MVI\map\fig01.mxd

Notes:  
1. Groundwater contours from October 2016.  
2. CVOC contours from October 2016.



**Legend**

- PCE Commercial Vapor Intrusion Screening Level (65 ug/L)
- TCE Commercial Vapor Intrusion Screening Level (7.4 ug/L)
- CT Commercial Vapor Intrusion Screening Level (1.8 ug/L)
- CF Commercial Vapor Intrusion Screening Level (3.6 ug/L)
- VC Commercial Vapor Intrusion Screening Level (2.5 ug/L)
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Fluvial Aquifer Well
- Intermediate Aquifer Well
- Property Boundary
- Area Available for Unrestricted Use
- Roads
- Building with Number and Lessee(s)
- Clay Elevation Exceeds Groundwater Elevation

- Fluvial Aquifer Well
- Intermediate Aquifer Well
- Property Boundary
- Area Available for Unrestricted Use
- Roads
- Building with Number and Lessee(s)
- Clay Elevation Exceeds Groundwater Elevation

**Figure 1**

**Comprehensive Vapor Intrusion Map**

Main Installation VI Study

Defense Depot  
Memphis, Tennessee

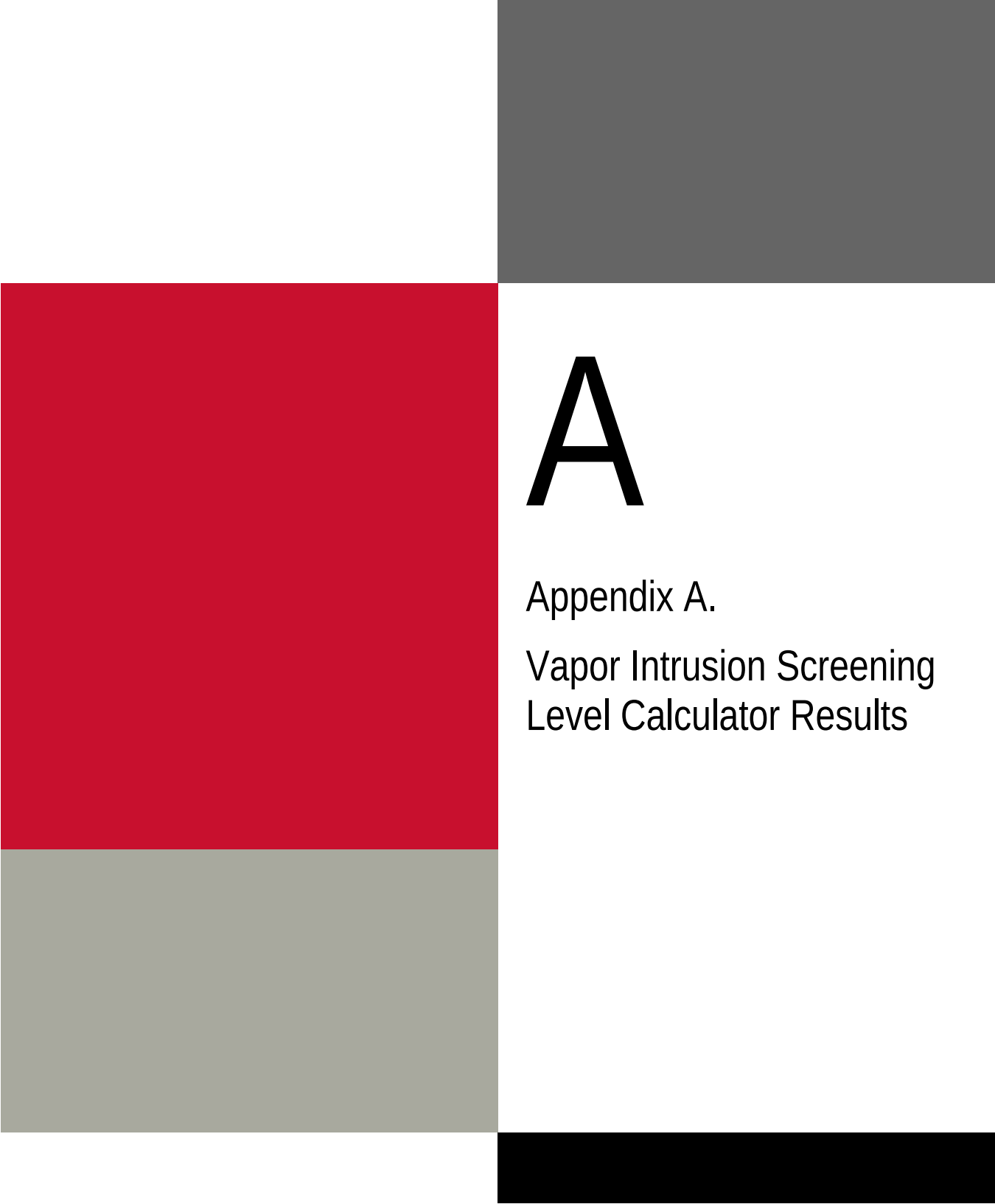
0 250 500  
Feet

Projection: NAD 1983 StatePlane Tennessee  
Units: Feet, Elevation Units: Feet, NAVD83

Date: 6/12/2017  
Edition: Rev 0

**DR**



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# A

Appendix A.

Vapor Intrusion Screening  
Level Calculator Results



# Appendix A-1 Groundwater Screening Level Calculation



VI Groundwater  
Screening Levels  
(micrograms per liter)

EPA-OLEM VAPOR INTRUSION ASSESSMENT

Vapor Intrusion Screening Level (VSL) Calculator Version 3.5.1 (May 2016 RSLs)

The primary objective of risk-based screening is to identify sites or buildings unlikely to pose a health concern through the vapor intrusion pathway. Generally, at properties where subsurface concentrations of vapor-forming chemicals (e.g., groundwater or "near source" soil gas concentrations) fall below screening levels (i.e., VSLs), no further action or study is warranted, so long as the exposure assumptions match those taken into account by the calculations and the site fulfills the conditions and assumptions of the generic conceptual model underlying the screening levels. In a similar fashion, the results of risk-based screening can help the data review team identify onsite, buildings, and/or chemicals that can be eliminated from further assessment. The generic conceptual model underlying these screening levels is described in OSWER Publication 9200.2-154 (OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air) (EPA 2015, Section 6.5)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens                                                                                             |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens                                                                              |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS      |                      | Does the chemical meet the definition for volatility? | Does chemical have inhalation toxicity data? | Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Soil Source? | Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source? | Target Indoor Air Conc. @ TCR = 1E-06 or THQ = 1 | Toxicity Basis | Target Sub-Slab and Exterior Soil Gas Conc. @ TCR = 1E-06 or THQ = 1 | Target Ground Water Conc. @ TCR = 1E-06 or THQ = 1 | Is Target Ground Water Conc. < MCL? | Pure Phase Vapor Conc. @ 25°C | Maximum Groundwater Vapor Conc. | Temperature for Maximum Groundwater Vapor Conc. | Lower Explosive Limit** | LEL Source | Inhalation Unit Risk | IUR Source* | Reference Concentration | RFC Source* | Mutagenic Indicator | Target Indoor Air Conc. for Carcinogens @ TCR = 1E-06 | Target Indoor Air Conc. for Non-Carcinogens @ THQ = 1 |
|----------|----------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------|----------------------------------------------------------------------|----------------------------------------------------|-------------------------------------|-------------------------------|---------------------------------|-------------------------------------------------|-------------------------|------------|----------------------|-------------|-------------------------|-------------|---------------------|-------------------------------------------------------|-------------------------------------------------------|
|          |                      |                                                       |                                              |                                                                                                           |                                                                                                                  |                                                  |                |                                                                      |                                                    |                                     |                               |                                 |                                                 |                         |            |                      |             |                         |             |                     |                                                       |                                                       |
|          |                      | (HLC>1E-5 or VP>1)                                    | (IUR and/or RfC)                             | Coc > Cialarger?                                                                                          | Coc > Cialarger?                                                                                                 | MIN(CiAc,CiALnc)                                 |                | Coc                                                                  | Coc                                                | Coc<MCL?                            | Coc                           | Coc                             | Temp or 25                                      | LEL                     |            |                      |             |                         |             |                     |                                                       |                                                       |
| 56-23-5  | Carbon Tetrachloride | Yes                                                   | Yes                                          | Yes                                                                                                       | Yes                                                                                                              | 2.0E+00                                          | C              | 6.8E+01                                                              | 1.8E+00                                            | Yes (5)                             | 9.52E+08                      | 8.95E+08                        | 25                                              |                         |            | 6.00E-06             | I           | 1.00E-01                | I           | I                   | 2.0E+00                                               | 4.4E+02                                               |
| 01-66-3  | Chloroform           | Yes                                                   | Yes                                          | Yes                                                                                                       | Yes                                                                                                              | 5.3E-01                                          | C              | 1.8E+01                                                              | 3.0E+00                                            | Yes (8,9E-06)†                      | 1.27E+09                      | 1.19E+09                        | 25                                              |                         |            | 2.00E-05             | I           | 9.80E-02                | A           |                     | 5.3E-01                                               | 4.3E+02                                               |
| 127-18-4 | Tetrachloroethylene  | Yes                                                   | Yes                                          | Yes                                                                                                       | Yes                                                                                                              | 4.7E+01                                          | C              | 1.6E+03                                                              | 6.5E+01                                            | No (5)                              | 1.65E+08                      | 1.49E+08                        | 25                                              |                         |            | 2.00E-07             | I           | 4.00E-02                | I           | I                   | 4.7E+01                                               | 1.8E+02                                               |
| 79-01-6  | Trichloroethylene    | Yes                                                   | Yes                                          | Yes                                                                                                       | Yes                                                                                                              | 3.0E+00                                          | C              | 1.0E+02                                                              | 7.4E+00                                            | No (5)                              | 4.88E+08                      | 5.15E+08                        | 25                                              | 8                       | N          | see note             | I           | 2.00E-03                | I           | TCE                 | 3.0E+00                                               | 8.9E+00                                               |
| 75-01-4  | Vinyl Chloride       | Yes                                                   | Yes                                          | Yes                                                                                                       | Yes                                                                                                              | 2.8E+00                                          | C              | 9.3E+01                                                              | 2.5E+00                                            | No (2)                              | 1.00E+10                      | 1.00E+10                        | 25                                              | 3.6                     | N          | 4.40E-06             | I           | 1.00E-01                | I           | VC                  | 2.8E+00                                               | 4.4E+02                                               |

Notes:

(1) Inhalation Pathway Exposure Parameters (RME):

Exposure Scenario  
Averaging time for carcinogens  
Averaging time for non-carcinogens  
Exposure duration  
Exposure frequency  
Exposure time

Units

Residential  
Symbol Value  
ATC\_R 70  
ATnc\_R 26  
ED\_R 26  
EF\_R 350  
ET\_R 24

Commercial  
Symbol Value  
ATC\_C 70  
ATnc\_C 25  
ED\_C 25  
EF\_C 250  
ET\_C 8

Selected (based on scenario in cell G10)

Symbol Value  
ATC 70  
ATnc 25  
ED 25  
EF 250  
ET 8

(2) Generic Attenuation Factors:

Source Medium of Vapors  
Groundwater  
Sub-Slab and Exterior Soil Gas

(-)  
(-)

Residential  
Symbol Value  
AFgw\_R 0.001  
AFss\_R 0.03

Commercial  
Symbol Value  
AFgw\_C 0.001  
AFss\_C 0.03

Selected (based on scenario in cell G10)

Symbol Value  
AFgw 0.001  
AFss 0.03

(3) Formulas

CiAc target = MIN(CiAc, CiALnc)  
CiAc (ug/m3) = TCR x ATc x (365 days/yr) / (ED x EF x ET x IUR)  
CiALnc (ug/m3) = THQ x ATnc x (365 days/yr) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) Special Case Chemicals

Trichloroethylene

Residential  
Symbol Value  
mIURTCR\_R 3.00E-06  
IURTCR\_R 3.10E-06

Commercial  
Symbol Value  
mIURTCR\_C 0.00E+00  
IURTCR\_C 4.10E-06

Selected (based on scenario in cell G10)

Symbol Value  
mIURTCR 0.00E+00  
IURTCR 4.10E-06

Mutagenic Chemicals

The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

| Age Cohort    | Exposure Duration (years) | Age-dependent adjustment factor |
|---------------|---------------------------|---------------------------------|
| 0 - 2 years   | 2                         | 10                              |
| 2 - 6 years   | 4                         | 3                               |
| 6 - 16 years  | 10                        | 3                               |
| 16 - 26 years | 10                        | 1                               |

Mutagenic-mode-of-action (MMAOA) adjustment factor 25

This factor is used in the equations for mutagenic chemicals.

See the Navigation Guide equation for CiAc for vinyl chloride.

Notation:

NVT = Not sufficiently volatile and/or toxic to pose inhalation risk in selected exposure scenario for the indicated medium

C = Carcinogenic

NC = Non-carcinogenic

I = RfC: EPA Integrated Risk Information System (IRIS). Available online at:

P = PPRTV: EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at:

A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at:

CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at:

H = HEAST: EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at:

S = See RSL User Guide, Section 5

X = PPRTV Appendix

E = The Engineering Toolbox. Available online at [http://www.engineeringtoolbox.com/explosive-concentration-limits-d\\_423.html](http://www.engineeringtoolbox.com/explosive-concentration-limits-d_423.html)

N = Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH). Pocket Guide to Chemical Hazards. Available online at:

M = Chemical-specific MSDS

Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (d) above).

VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).

TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (d) above).

Yellow highlighting indicates site-specific parameters that may be edited by the user.

Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.

\*\*Lower explosive limit is the minimum concentration of the compound in air (% by volume) that is needed for the gas to ignite and explode.



## Appendix A-2

### Well DR2-1



# DR2-1

## EPA-OLEM VAPOR INTRUSION ASSESSMENT

Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)                         |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)                     |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS      | Chemical Name        | Site Groundwater Concentration<br>Cgw<br>(ug/L) | Calculated Indoor Air Concentration<br>Cia<br>(ug/m <sup>3</sup> ) | VI Carcinogenic Risk<br>CR | VI Hazard<br>HQ |
|----------|----------------------|-------------------------------------------------|--------------------------------------------------------------------|----------------------------|-----------------|
| 56-23-5  | Carbon Tetrachloride | 3.2E+01                                         | 3.61E+01                                                           | 1.8E-05                    | 8.2E-02         |
| 67-66-3  | Chloroform           | 5.0E+00                                         | 7.46E-01                                                           | 1.4E-06                    | 1.7E-03         |
| 127-18-4 | Tetrachloroethylene  | 2.1E+02                                         | 1.51E+02                                                           | 3.2E-06                    | 8.6E-01         |
| 79-01-6  | Trichloroethylene    | 5.9E+00                                         | 2.38E+00                                                           | 8.0E-07                    | 2.7E-01         |
| 75-01-4  | Vinyl Chloride       | 1.0E+00                                         | 1.14E+00                                                           | 4.1E-07                    | 2.6E-03         |

| Inhalation Unit Risk<br>IUR<br>(ug/m <sup>3</sup> ) <sup>-1</sup> | IUR Source* | Reference Concentration<br>RfC<br>(mg/m <sup>3</sup> ) | RfC Source* | Mutagenic Indicator<br>i |
|-------------------------------------------------------------------|-------------|--------------------------------------------------------|-------------|--------------------------|
| 6.00E-06                                                          | I           | 1.00E-01                                               | I           |                          |
| 2.30E-05                                                          | I           | 9.80E-02                                               | A           |                          |
| 2.60E-07                                                          | I           | 4.00E-02                                               | I           |                          |
| see note                                                          | I           | 2.00E-03                                               | I           | TCE                      |
| 4.40E-06                                                          | I           | 1.00E-01                                               | I           | VC                       |

### Notes:

| (1) | <u>Inhalation Pathway Exposure Parameters (RME):</u> | Units     | Residential   | Commercial   | Selected (based on scenario) |
|-----|------------------------------------------------------|-----------|---------------|--------------|------------------------------|
|     | <b>Exposure Scenario</b>                             |           | <b>Symbol</b> | <b>Value</b> | <b>Symbol</b>                |
|     | Averaging time for carcinogens                       | (yrs)     | ATc_R_GW      | 70           | ATc_GW                       |
|     | Averaging time for non-carcinogens                   | (yrs)     | ATnc_R_GW     | 26           | ATnc_GW                      |
|     | Exposure duration                                    | (yrs)     | ED_R_GW       | 26           | ED_GW                        |
|     | Exposure frequency                                   | (days/yr) | EF_R_GW       | 350          | EF_GW                        |
|     | Exposure time                                        | (hr/day)  | ET_R_GW       | 24           | ET_GW                        |

| (2) | <u>Generic Attenuation Factors:</u> |     | Residential   | Commercial   | Selected (based on scenario) |
|-----|-------------------------------------|-----|---------------|--------------|------------------------------|
|     | <b>Source Medium of Vapors</b>      |     | <b>Symbol</b> | <b>Value</b> | <b>Symbol</b>                |
|     | Groundwater                         | (-) | AFgw_R_GW     | 0.001        | AFgw_GW                      |
|     | Sub-Slab and Exterior Soil Gas      | (-) | AFss_R_GW     | 0.03         | AFss_GW                      |

| (3) | <u>Formulas</u>                                                                                  |  | Residential | Commercial | Selected (based on scenario) |
|-----|--------------------------------------------------------------------------------------------------|--|-------------|------------|------------------------------|
|     | Cia, target = MIN( Cia,c; Cia,nc)                                                                |  |             |            |                              |
|     | Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)                  |  |             |            |                              |
|     | Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET) |  |             |            |                              |

| (4) | <u>Special Case Chemicals</u> |  | Residential   | Commercial   | Selected (based on scenario) |
|-----|-------------------------------|--|---------------|--------------|------------------------------|
|     | Trichloroethylene             |  | <b>Symbol</b> | <b>Value</b> | <b>Symbol</b>                |
|     |                               |  | mIURTCE_R_GW  | 1.00E-06     | mIURTCE_GW                   |
|     |                               |  | IURTCE_R_GW   | 3.10E-06     | IURTCE_GW                    |

Mutagenic Chemicals The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

| Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride. | Age Cohort    | Exposure Duration | Age-dependent adjustment factor |
|-----------------------------------------------------------------------------------------------------------|---------------|-------------------|---------------------------------|
|                                                                                                           | 0 - 2 years   | 2                 | 10                              |
|                                                                                                           | 2 - 6 years   | 4                 | 3                               |
|                                                                                                           | 6 - 16 years  | 10                | 3                               |
|                                                                                                           | 16 - 26 years | 10                | 1                               |

**Mutagenic-mode-of-action (MMAOA) adjustment factor** 25 This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride See the Navigation Guide equation for Cia,c for vinyl chloride.

### Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at <http://www.epa.gov/iris/subst/index.html>  
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at <http://hhpprtv.ornl.gov/pprtv.shtml>  
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: <http://www.atsdr.cdc.gov/mrls/index.htm>  
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: <http://www.oehha.ca.gov/risk/ChemicalDB/index.asp>  
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: <http://epa-heast.ornl.gov/heast.shtml>  
S = See RSL User Guide, Section 5  
X = PPRTV Appendix  
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).

EPA-OLEM VAPOR INTRUSION ASSESSMENT  
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)                         |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)                     |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS | Chemical Name | Site Groundwater Concentration | Calculated Indoor Air Concentration | VI Carcinogenic Risk | VI Hazard |
|-----|---------------|--------------------------------|-------------------------------------|----------------------|-----------|
|     |               | Cgw                            | Cia                                 | CR                   | HQ        |
|     |               | (ug/L)                         | (ug/m <sup>3</sup> )                |                      |           |

| Inhalation Unit Risk               | IUR Source* | Reference Concentration | RFC Source* | Mutagenic Indicator |
|------------------------------------|-------------|-------------------------|-------------|---------------------|
| IUR                                |             | RfC                     |             |                     |
| (ug/m <sup>3</sup> ) <sup>-1</sup> |             | (mg/m <sup>3</sup> )    |             |                     |

VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).  
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).  
Yellow highlighting indicates site-specific parameters that may be edited by the user  
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.  
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).



Appendix A-3  
Well MW-100B

# MW-100B

## EPA-OLEM VAPOR INTRUSION ASSESSMENT

Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)                         |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)                     |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS      | Chemical Name        | Site Groundwater Concentration<br>Cgw<br>(ug/L) | Calculated Indoor Air Concentration<br>Cia<br>(ug/m <sup>3</sup> ) | VI Carcinogenic Risk<br>CR | VI Hazard<br>HQ |
|----------|----------------------|-------------------------------------------------|--------------------------------------------------------------------|----------------------------|-----------------|
| 56-23-5  | Carbon Tetrachloride | 1.0E+00                                         | 1.13E+00                                                           | 5.5E-07                    | 2.6E-03         |
| 67-66-3  | Chloroform           | 3.0E-01                                         | 4.50E-02                                                           | 8.4E-08                    | 1.0E-04         |
| 127-18-4 | Tetrachloroethylene  | 1.1E+00                                         | 7.89E-01                                                           | 1.7E-08                    | 4.5E-03         |
| 79-01-6  | Trichloroethylene    | 3.1E-01                                         | 1.23E-01                                                           | 4.1E-08                    | 1.4E-02         |
| 75-01-4  | Vinyl Chloride       | 1.0E+02                                         | 1.15E+02                                                           | 4.1E-05                    | 2.6E-01         |

| Inhalation Unit Risk<br>IUR<br>(ug/m <sup>3</sup> ) <sup>-1</sup> | IUR Source* | Reference Concentration<br>RfC<br>(mg/m <sup>3</sup> ) | RfC Source* | Mutagenic Indicator<br>i |
|-------------------------------------------------------------------|-------------|--------------------------------------------------------|-------------|--------------------------|
| 6.00E-06                                                          | I           | 1.00E-01                                               | I           |                          |
| 2.30E-05                                                          | I           | 9.80E-02                                               | A           |                          |
| 2.60E-07                                                          | I           | 4.00E-02                                               | I           |                          |
| see note                                                          | I           | 2.00E-03                                               | I           | TCE                      |
| 4.40E-06                                                          | I           | 1.00E-01                                               | I           | VC                       |

### Notes:

#### (1) Inhalation Pathway Exposure Parameters (RME):

##### Exposure Scenario

Averaging time for carcinogens  
Averaging time for non-carcinogens  
Exposure duration  
Exposure frequency  
Exposure time

##### Units

(yrs)  
(yrs)  
(yrs)  
(days/yr)  
(hr/day)

##### Residential

| Symbol    | Value |
|-----------|-------|
| ATc_R_GW  | 70    |
| ATnc_R_GW | 26    |
| ED_R_GW   | 26    |
| EF_R_GW   | 350   |
| ET_R_GW   | 24    |

##### Commercial

| Symbol    | Value |
|-----------|-------|
| ATc_C_GW  | 70    |
| ATnc_C_GW | 25    |
| ED_C_GW   | 25    |
| EF_C_GW   | 250   |
| ET_C_GW   | 8     |

##### Selected (based on scenario)

| Symbol  | Value |
|---------|-------|
| ATc_GW  | 70    |
| ATnc_GW | 25    |
| ED_GW   | 25    |
| EF_GW   | 250   |
| ET_GW   | 8     |

#### (2) Generic Attenuation Factors:

##### Source Medium of Vapors

Groundwater  
Sub-Slab and Exterior Soil Gas

(-)  
(-)

##### Residential

| Symbol    | Value |
|-----------|-------|
| AFgw_R_GW | 0.001 |
| AFss_R_GW | 0.03  |

##### Commercial

| Symbol    | Value |
|-----------|-------|
| AFgw_C_GW | 0.001 |
| AFss_C_GW | 0.03  |

##### Selected (based on scenario)

| Symbol  | Value |
|---------|-------|
| AFgw_GW | 0.001 |
| AFss_GW | 0.03  |

#### (3) Formulas

Cia, target = MIN( Cia,c; Cia,nc)

Cia,c (ug/m<sup>3</sup>) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)

Cia,nc (ug/m<sup>3</sup>) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

#### (4) Special Case Chemicals

Trichloroethylene

##### Residential

| Symbol       | Value    |
|--------------|----------|
| mIURTCE_R_GW | 1.00E-06 |
| IURTCE_R_GW  | 3.10E-06 |

##### Commercial

| Symbol       | Value    |
|--------------|----------|
| iIURTCE_C_GW | 0.00E+00 |
| IURTCE_C_GW  | 4.10E-06 |

##### Selected (based on scenario)

| Symbol     | Value    |
|------------|----------|
| mIURTCE_GW | 0.00E+00 |
| IURTCE_GW  | 4.10E-06 |

Mutagenic Chemicals

The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

| Age Cohort    | Exposure Duration | Age-dependent adjustment factor |
|---------------|-------------------|---------------------------------|
| 0 - 2 years   | 2                 | 10                              |
| 2 - 6 years   | 4                 | 3                               |
| 6 - 16 years  | 10                | 3                               |
| 16 - 26 years | 10                | 1                               |

Mutagenic-mode-of-action (MMA) adjustment factor

25

This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride

See the Navigation Guide equation for Cia,c for vinyl chloride.

### Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at

<http://www.epa.gov/iris/subst/index.html>

P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at

<http://hhpprtv.ornl.gov/pprtv.shtml>

A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at:

<http://www.atsdr.cdc.gov/mrls/index.htm>

CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at:

<http://www.oehha.ca.gov/risk/ChemicalDB/index.asp>

H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at:

<http://epa-heast.ornl.gov/heast.shtml>

S = See RSL User Guide, Section 5

X = PPRTV Appendix

Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).

EPA-OLEM VAPOR INTRUSION ASSESSMENT  
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)                         |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)                     |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS | Chemical Name | Site Groundwater Concentration | Calculated Indoor Air Concentration | VI Carcinogenic Risk | VI Hazard |
|-----|---------------|--------------------------------|-------------------------------------|----------------------|-----------|
|     |               | Cgw                            | Cia                                 | CR                   | HQ        |
|     |               | (ug/L)                         | (ug/m <sup>3</sup> )                |                      |           |

| Inhalation Unit Risk               | IUR Source* | Reference Concentration | RFC Source* | Mutagenic Indicator |
|------------------------------------|-------------|-------------------------|-------------|---------------------|
| IUR                                |             | RfC                     |             |                     |
| (ug/m <sup>3</sup> ) <sup>-1</sup> |             | (mg/m <sup>3</sup> )    |             |                     |

VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).  
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).  
Yellow highlighting indicates site-specific parameters that may be edited by the user  
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.  
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).



Appendix A-4  
Well PMW21-04



# PMW21-04

## EPA-OLEM VAPOR INTRUSION ASSESSMENT

Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)                         |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)                     |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS      | Chemical Name        | Site Groundwater Concentration<br>Cgw<br>(ug/L) | Calculated Indoor Air Concentration<br>Cia<br>(ug/m <sup>3</sup> ) | VI Carcinogenic Risk<br>CR | VI Hazard<br>HQ |
|----------|----------------------|-------------------------------------------------|--------------------------------------------------------------------|----------------------------|-----------------|
| 56-23-5  | Carbon Tetrachloride | 1.0E+00                                         | 1.13E+00                                                           | 5.5E-07                    | 2.6E-03         |
| 67-66-3  | Chloroform           | 1.6E-01                                         | 2.36E-02                                                           | 4.4E-08                    | 5.5E-05         |
| 127-18-4 | Tetrachloroethylene  | 2.9E+02                                         | 2.12E+02                                                           | 4.5E-06                    | 1.2E+00         |
| 79-01-6  | Trichloroethylene    | 1.2E+02                                         | 4.91E+01                                                           | 1.6E-05                    | 5.6E+00         |
| 75-01-4  | Vinyl Chloride       | 1.0E+00                                         | 1.14E+00                                                           | 4.1E-07                    | 2.6E-03         |

| Inhalation Unit Risk<br>IUR<br>(ug/m <sup>3</sup> ) <sup>-1</sup> | IUR Source* | Reference Concentration<br>RfC<br>(mg/m <sup>3</sup> ) | RfC Source* | Mutagenic Indicator<br>i |
|-------------------------------------------------------------------|-------------|--------------------------------------------------------|-------------|--------------------------|
| 6.00E-06                                                          | I           | 1.00E-01                                               | I           |                          |
| 2.30E-05                                                          | I           | 9.80E-02                                               | A           |                          |
| 2.60E-07                                                          | I           | 4.00E-02                                               | I           |                          |
| see note                                                          | I           | 2.00E-03                                               | I           | TCE                      |
| 4.40E-06                                                          | I           | 1.00E-01                                               | I           | VC                       |

### Notes:

#### (1) Inhalation Pathway Exposure Parameters (RME):

##### Exposure Scenario

Averaging time for carcinogens  
(yrs)  
Averaging time for non-carcinogens  
(yrs)  
Exposure duration  
(days/yr)  
Exposure frequency  
(hr/day)

##### Units

##### Residential

##### Commercial

##### Selected (based on scenario)

| Symbol    | Value | Symbol    | Value | Symbol  | Value |
|-----------|-------|-----------|-------|---------|-------|
| ATc_R_GW  | 70    | ATc_C_GW  | 70    | ATc_GW  | 70    |
| ATnc_R_GW | 26    | ATnc_C_GW | 25    | ATnc_GW | 25    |
| ED_R_GW   | 26    | ED_C_GW   | 25    | ED_GW   | 25    |
| EF_R_GW   | 350   | EF_C_GW   | 250   | EF_GW   | 250   |
| ET_R_GW   | 24    | ET_C_GW   | 8     | ET_GW   | 8     |

#### (2) Generic Attenuation Factors:

##### Source Medium of Vapors

Groundwater  
(-)  
Sub-Slab and Exterior Soil Gas  
(-)

##### Residential

##### Commercial

##### Selected (based on scenario)

| Symbol    | Value | Symbol    | Value | Symbol  | Value |
|-----------|-------|-----------|-------|---------|-------|
| AFgw_R_GW | 0.001 | AFgw_C_GW | 0.001 | AFgw_GW | 0.001 |
| AFss_R_GW | 0.03  | AFss_C_GW | 0.03  | AFss_GW | 0.03  |

#### (3) Formulas

Cia, target = MIN( Cia,c; Cia,nc)  
Cia,c (ug/m<sup>3</sup>) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)  
Cia,nc (ug/m<sup>3</sup>) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

#### (4) Special Case Chemicals

Trichloroethylene

##### Residential

##### Commercial

##### Selected (based on scenario)

| Symbol       | Value    | Symbol       | Value    | Symbol     | Value    |
|--------------|----------|--------------|----------|------------|----------|
| mIURTCE_R_GW | 1.00E-06 | iIURTCE_C_GW | 0.00E+00 | mIURTCE_GW | 0.00E+00 |
| IURTCE_R_GW  | 3.10E-06 | IURTCE_C_GW  | 4.10E-06 | IURTCE_GW  | 4.10E-06 |

Mutagenic Chemicals

The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

| Age Cohort    | Exposure Duration | Age-dependent adjustment factor |
|---------------|-------------------|---------------------------------|
| 0 - 2 years   | 2                 | 10                              |
| 2 - 6 years   | 4                 | 3                               |
| 6 - 16 years  | 10                | 3                               |
| 16 - 26 years | 10                | 1                               |

Mutagenic-mode-of-action (MMAO) adjustment factor

25

This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride

See the Navigation Guide equation for Cia,c for vinyl chloride.

### Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at <http://www.epa.gov/iris/subst/index.html>  
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at <http://hhpprtv.ornl.gov/pprtv.shtml>  
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: <http://www.atsdr.cdc.gov/mrls/index.htm>  
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: <http://www.oehha.ca.gov/risk/ChemicalDB/index.asp>  
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: <http://epa-heast.ornl.gov/heast.shtml>  
S = See RSL User Guide, Section 5  
X = PPRTV Appendix  
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).

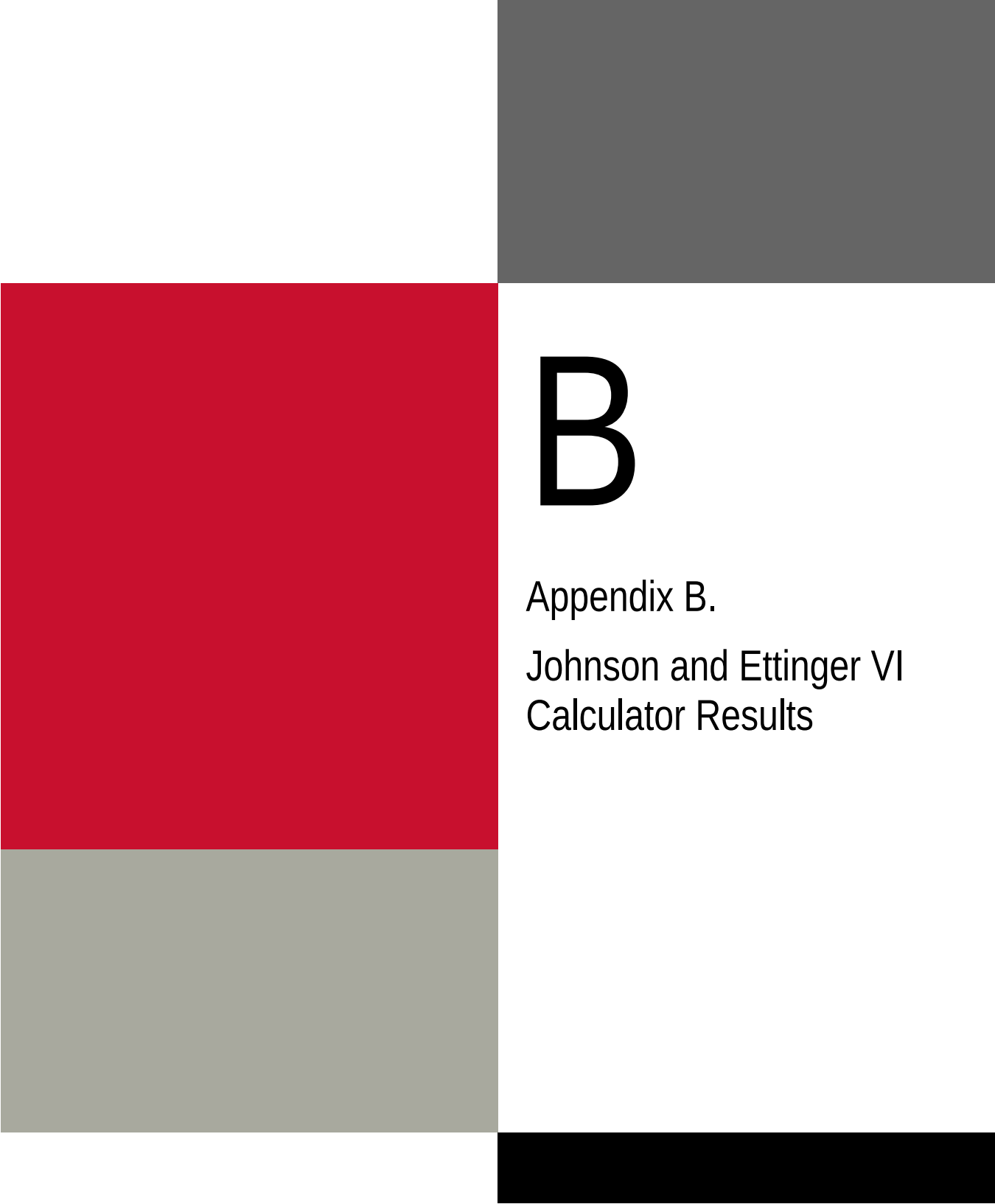
EPA-OLEM VAPOR INTRUSION ASSESSMENT  
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

| Parameter                                  | Symbol   | Value      | Instructions                                                                                                                  |
|--------------------------------------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Exposure Scenario                          | Scenario | Commercial | Select residential or commercial scenario from pull down list                                                                 |
| Target Risk for Carcinogens                | TCR      | 1.00E-06   | Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)                         |
| Target Hazard Quotient for Non-Carcinogens | THQ      | 1          | Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)                     |
| Average Groundwater Temperature (°C)       | Tgw      | 25         | Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations |

| CAS | Chemical Name | Site Groundwater Concentration | Calculated Indoor Air Concentration | VI Carcinogenic Risk | VI Hazard |
|-----|---------------|--------------------------------|-------------------------------------|----------------------|-----------|
|     |               | Cgw                            | Cia                                 | CR                   | HQ        |
|     |               | (ug/L)                         | (ug/m <sup>3</sup> )                |                      |           |

| Inhalation Unit Risk               | IUR Source* | Reference Concentration | RFC Source* | Mutagenic Indicator |
|------------------------------------|-------------|-------------------------|-------------|---------------------|
| IUR                                |             | RfC                     |             |                     |
| (ug/m <sup>3</sup> ) <sup>-1</sup> |             | (mg/m <sup>3</sup> )    |             |                     |

VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).  
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).  
Yellow highlighting indicates site-specific parameters that may be edited by the user  
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.  
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

A decorative graphic on the left side of the page consists of four overlapping rectangles: a large red rectangle, a smaller grey rectangle above it, a larger grey rectangle below it, and a black rectangle at the bottom right.

# B

Appendix B.

Johnson and Ettinger VI  
Calculator Results



Appendix B-1  
Well DR2-1

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

| ENTER                                                                                     |  | ENTER                                                                             |  |                                                             |  |                                                                                        |  |                                                                           |  |                                                                           |  |                                                                         |  |
|-------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|--|-------------------------------------------------------------|--|----------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------|--|---------------------------------------------------------------------------|--|-------------------------------------------------------------------------|--|
| Chemical<br>CAS No.<br>(numbers only,<br>no dashes)                                       |  | Initial<br>groundwater<br>conc.,<br>$C_w$<br>( $\mu\text{g/L}$ )                  |  |                                                             |  |                                                                                        |  |                                                                           |  |                                                                           |  |                                                                         |  |
| 67663                                                                                     |  | 4.97E+00                                                                          |  |                                                             |  |                                                                                        |  |                                                                           |  |                                                                           |  |                                                                         |  |
| ENTER                                                                                     |  | ENTER                                                                             |  | ENTER                                                       |  | ENTER                                                                                  |  | ENTER                                                                     |  | ENTER                                                                     |  | ENTER                                                                   |  |
| Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ )        |  | Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) |  | Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) |  | Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm)                                    |  | Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) |  | Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) |  | Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) |  |
| 22                                                                                        |  | 15                                                                                |  | 2590                                                        |  | 915                                                                                    |  | 1675                                                                      |  |                                                                           |  | B                                                                       |  |
| ENTER                                                                                     |  | ENTER                                                                             |  | ENTER                                                       |  | ENTER                                                                                  |  | ENTER                                                                     |  | ENTER                                                                     |  | ENTER                                                                   |  |
| Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) |  | SCS<br>soil type<br>directly above<br>water table                                 |  | OR                                                          |  | User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |  |                                                                           |  |                                                                           |  |                                                                         |  |
|                                                                                           |  | SI                                                                                |  |                                                             |  |                                                                                        |  |                                                                           |  |                                                                           |  | 1.00E-08                                                                |  |

MORE  
↓

| ENTER                                                                                        |  | ENTER                                                                       |  | ENTER                                                                       |  | ENTER                                                                                        |  | ENTER                                                                                        |  | ENTER                                                                       |  | ENTER                                                       |  |
|----------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------|--|-----------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------|--|-------------------------------------------------------------|--|
| Stratum A<br>SCS<br>soil type                                                                |  | Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) |  | Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless)                 |  | Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) |  | Stratum B<br>SCS<br>soil type                                                                |  | Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) |  | Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) |  |
| CL                                                                                           |  | 1.48                                                                        |  | 0.442                                                                       |  | 0.168                                                                                        |  | SI                                                                                           |  | 1.35                                                                        |  | 0.489                                                       |  |
| ENTER                                                                                        |  | ENTER                                                                       |  | ENTER                                                                       |  | ENTER                                                                                        |  | ENTER                                                                                        |  | ENTER                                                                       |  | ENTER                                                       |  |
| Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) |  | Stratum C<br>SCS<br>soil type                                               |  | Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) |  | Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless)                                  |  | Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |  |                                                                             |  |                                                             |  |
| 0.167                                                                                        |  |                                                                             |  | 1.5                                                                         |  | 0.43                                                                                         |  | 0.3                                                                                          |  |                                                                             |  |                                                             |  |

MORE  
↓

| ENTER                                                                                          |  | ENTER                                                                          |  | ENTER                                                  |  | ENTER                                                 |  | ENTER                                         |  | ENTER                                             |  | ENTER                                          |  |
|------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------|--|--------------------------------------------------------|--|-------------------------------------------------------|--|-----------------------------------------------|--|---------------------------------------------------|--|------------------------------------------------|--|
| Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm)                                |  | Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) |  | Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) |  | Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) |  | Enclosed<br>space<br>height,<br>$H_B$<br>(cm) |  | Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) |  | Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) |  |
| 10                                                                                             |  | 40                                                                             |  | 1000                                                   |  | 1000                                                  |  | 244                                           |  | 0.1                                               |  | 0.25                                           |  |
| ENTER                                                                                          |  | ENTER                                                                          |  | ENTER                                                  |  | ENTER                                                 |  | ENTER                                         |  | ENTER                                             |  | ENTER                                          |  |
| Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |  |                                                                                |  |                                                        |  |                                                       |  |                                               |  |                                                   |  |                                                |  |
| 5                                                                                              |  |                                                                                |  |                                                        |  |                                                       |  |                                               |  |                                                   |  |                                                |  |

MORE  
↓

| ENTER                                                    |  | ENTER                                                          |  | ENTER                                |  | ENTER                                     |  | ENTER                                                  |  | ENTER                                                                 |  |
|----------------------------------------------------------|--|----------------------------------------------------------------|--|--------------------------------------|--|-------------------------------------------|--|--------------------------------------------------------|--|-----------------------------------------------------------------------|--|
| Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) |  | Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) |  | Exposure<br>duration,<br>ED<br>(yrs) |  | Exposure<br>frequency,<br>EF<br>(days/yr) |  | Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) |  | Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |  |
| 70                                                       |  | 25                                                             |  | 25                                   |  | 250                                       |  | 1.0E-06                                                |  | 1                                                                     |  |

MORE  
↓

END

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 7.92E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 2.6E-07                                                                    | 3.2E-04                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

| ENTER                                                                                                                           |                                                                                   | ENTER                                                       |                                                    |      |  |                                                                         |                                                   |                                                                                           |    |                                                                                        |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------|------|--|-------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------|--|--|--|
| Chemical<br>CAS No.<br>(numbers only,<br>no dashes)                                                                             | Initial<br>groundwater<br>conc.,<br>$C_w$<br>( $\mu\text{g/L}$ )                  |                                                             |                                                    |      |  |                                                                         |                                                   |                                                                                           |    |                                                                                        |  |  |  |
| 56235                                                                                                                           | 3.20E+01                                                                          |                                                             |                                                    |      |  |                                                                         |                                                   |                                                                                           |    |                                                                                        |  |  |  |
| Groundwater Vapor Emissions To Indoor Air<br>Commercial/Industrial Exposure Scenario<br>Moderate/Low Permeability Soil Scenario |                                                                                   |                                                             |                                                    |      |  |                                                                         |                                                   |                                                                                           |    |                                                                                        |  |  |  |
| Chemical                                                                                                                        |                                                                                   |                                                             |                                                    |      |  |                                                                         |                                                   |                                                                                           |    |                                                                                        |  |  |  |
| Carbon tetrachloride                                                                                                            |                                                                                   |                                                             |                                                    |      |  |                                                                         |                                                   |                                                                                           |    |                                                                                        |  |  |  |
| ENTER                                                                                                                           | ENTER                                                                             | ENTER                                                       | ENTER                                              |      |  | ENTER                                                                   | ENTER                                             | ENTER                                                                                     | OR | ENTER                                                                                  |  |  |  |
| Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ )                                              | Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | Totals must add up to value of $L_{WT}$ (cell G28) |      |  | Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | SCS<br>soil type<br>directly above<br>water table | Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) |    | User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |  |  |  |
| 22                                                                                                                              | 15                                                                                | 2590                                                        | 915                                                | 1675 |  | B                                                                       | SI                                                |                                                                                           |    | 1.00E-08                                                                               |  |  |  |

MORE  
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| ENTER                         | ENTER                                                                       | ENTER                                                       | ENTER                                                                                        | ENTER                         | ENTER                                                                       | ENTER                                                       | ENTER                                                                                        | ENTER                         | ENTER                                                                       | ENTER                                                       | ENTER                                                                                        |
|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Stratum A<br>SCS<br>soil type | Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | Stratum B<br>SCS<br>soil type | Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | Stratum C<br>SCS<br>soil type | Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
| CL                            | 1.48                                                                        | 0.442                                                       | 0.168                                                                                        | SI                            | 1.35                                                                        | 0.489                                                       | 0.167                                                                                        |                               | 1.5                                                                         | 0.43                                                        | 0.3                                                                                          |

MORE  
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| ENTER                                                           | ENTER                                                                          | ENTER                                                  | ENTER                                                 | ENTER                                         | ENTER                                             | ENTER                                            | ENTER                                                                                          |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------|
| Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | Indoor<br>air exchange<br>rate,<br>$ER$<br>(1/h) | Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
| 10                                                              | 40                                                                             | 1000                                                   | 1000                                                  | 244                                           | 0.1                                               | 0.25                                             | 5                                                                                              |

MORE  
↓

| ENTER                                                      | ENTER                                                          | ENTER                                  | ENTER                                       | ENTER                                                    | ENTER                                                                   |
|------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|---------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|
| Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs)   | Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | Exposure<br>duration,<br>$ED$<br>(yrs) | Exposure<br>frequency,<br>$EF$<br>(days/yr) | Target<br>risk for<br>carcinogens,<br>$TR$<br>(unitless) | Target hazard<br>quotient for<br>noncarcinogens,<br>$THQ$<br>(unitless) |
| 70                                                         | 25                                                             | 25                                     | 250                                         | 1.0E-06                                                  | 1                                                                       |
| Used to calculate risk-based<br>groundwater concentration. |                                                                |                                        |                                             |                                                          |                                                                         |

MORE  
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END

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 7.93E+05                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 2.6E-06                                                                    | 1.2E-02                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END



DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

127184 2.08E+02

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

Chemical

Tetrachloroethylene

**MORE**  
↓

| <b>ENTER</b><br>Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | <b>ENTER</b><br>Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | <b>ENTER</b><br>Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) | <b>ENTER</b><br>Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | <b>ENTER</b><br>SCS<br>soil type<br>directly above<br>water table | <b>ENTER</b><br>Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR | <b>ENTER</b><br>User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------|
| 22                                                                                                 | 15                                                                                                | 2590                                                                        | 915                                                                 | 1675                                                                                      |                                                                                           | B                                                                                       | SI                                                                |                                                                                                           |    | 1.00E-08                                                                                               |

**MORE**  
↓

| <b>ENTER</b><br>Stratum A<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | <b>ENTER</b><br>Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | <b>ENTER</b><br>Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | <b>ENTER</b><br>Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| CL                                                                         | 1.48                                                                                        | 0.442                                                                       | 0.168                                                                                                        | SI                                                                         | 1.35                                                                                        | 0.489                                                                       | 0.167                                                                                                        |                                                                            | 1.5                                                                                         | 0.43                                                                        | 0.3                                                                                                          |

**MORE**  
↓

| <b>ENTER</b><br>Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | <b>ENTER</b><br>Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | <b>ENTER</b><br>Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | <b>ENTER</b><br>Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | <b>ENTER</b><br>Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 10                                                                              | 40                                                                                             | 1000                                                                   | 1000                                                                  | 244                                                           | 0.1                                                               | 0.25                                                           | 5                                                                                                              |

**MORE**  
↓

| <b>ENTER</b><br>Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | <b>ENTER</b><br>Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | <b>ENTER</b><br>Exposure<br>duration,<br>ED<br>(yrs) | <b>ENTER</b><br>Exposure<br>frequency,<br>EF<br>(days/yr) | <b>ENTER</b><br>Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | <b>ENTER</b><br>Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 70                                                                       | 25                                                                             | 25                                                   | 250                                                       | 1.0E-06                                                                | 1                                                                                     |

**END**

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 2.00E+05                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 4.1E-07                                                                    | 1.1E-01                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

|                                                                                    |                                                                                   |                                                                  |                                                    |                                                                                                                                              |  |                                                                         |                                                   |                                                                                           |              |                                                                                        |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| <b>ENTER</b>                                                                       |                                                                                   | <b>ENTER</b>                                                     |                                                    | <div>Groundwater Vapor Emissions To Indoor Air<br/>Commercial/Industrial Exposure Scenario<br/>Moderate/Low Permeability Soil Scenario</div> |  |                                                                         |                                                   |                                                                                           |              |                                                                                        |  |  |  |  |  |  |  |  |  |
| Chemical<br>CAS No.<br>(numbers only,<br>no dashes)                                |                                                                                   | Initial<br>groundwater<br>conc.,<br>$C_w$<br>( $\mu\text{g/L}$ ) |                                                    |                                                                                                                                              |  |                                                                         |                                                   |                                                                                           |              |                                                                                        |  |  |  |  |  |  |  |  |  |
| 79016                                                                              |                                                                                   | 5.92E+00                                                         |                                                    |                                                                                                                                              |  |                                                                         |                                                   |                                                                                           |              |                                                                                        |  |  |  |  |  |  |  |  |  |
|                                                                                    |                                                                                   |                                                                  |                                                    |                                                                                                                                              |  | Chemical                                                                |                                                   |                                                                                           |              |                                                                                        |  |  |  |  |  |  |  |  |  |
|                                                                                    |                                                                                   |                                                                  |                                                    |                                                                                                                                              |  | Trichloroethylene                                                       |                                                   |                                                                                           |              |                                                                                        |  |  |  |  |  |  |  |  |  |
| <b>ENTER</b>                                                                       | <b>ENTER</b>                                                                      | <b>ENTER</b>                                                     | <b>ENTER</b>                                       |                                                                                                                                              |  | <b>ENTER</b>                                                            | <b>ENTER</b>                                      | <b>ENTER</b>                                                                              | <b>ENTER</b> | <b>ENTER</b>                                                                           |  |  |  |  |  |  |  |  |  |
| Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm)      | Totals must add up to value of $L_{WT}$ (cell G28) |                                                                                                                                              |  | Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | SCS<br>soil type<br>directly above<br>water table | Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR           | User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |  |  |  |  |  |  |  |  |  |
| 22                                                                                 | 15                                                                                | 2590                                                             | 915                                                | 1675                                                                                                                                         |  | B                                                                       | SI                                                | CL                                                                                        |              |                                                                                        |  |  |  |  |  |  |  |  |  |

MORE  
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|                               |                                                                             |                                                             |                                                                                              |                               |                                                                             |                                                             |                                                                                              |                               |                                                                             |                                                             |                                                                                              |
|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>ENTER</b>                  | <b>ENTER</b>                                                                | <b>ENTER</b>                                                | <b>ENTER</b>                                                                                 | <b>ENTER</b>                  | <b>ENTER</b>                                                                | <b>ENTER</b>                                                | <b>ENTER</b>                                                                                 | <b>ENTER</b>                  | <b>ENTER</b>                                                                | <b>ENTER</b>                                                | <b>ENTER</b>                                                                                 |
| Stratum A<br>SCS<br>soil type | Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | Stratum B<br>SCS<br>soil type | Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | Stratum C<br>SCS<br>soil type | Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
| CL                            | 1.48                                                                        | 0.442                                                       | 0.168                                                                                        | SI                            | 1.35                                                                        | 0.489                                                       | 0.167                                                                                        |                               | 1.5                                                                         | 0.43                                                        | 0.3                                                                                          |

MORE  
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|                                                                 |                                                                                |                                                        |                                                       |                                               |                                                   |                                                  |                                                                                                |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>ENTER</b>                                                    | <b>ENTER</b>                                                                   | <b>ENTER</b>                                           | <b>ENTER</b>                                          | <b>ENTER</b>                                  | <b>ENTER</b>                                      | <b>ENTER</b>                                     | <b>ENTER</b>                                                                                   |
| Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | Indoor<br>air exchange<br>rate,<br>$ER$<br>(1/h) | Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
| 10                                                              | 40                                                                             | 1000                                                   | 1000                                                  | 244                                           | 0.1                                               | 0.25                                             | 5                                                                                              |

MORE  
↓

|                                                          |                                                                |                                        |                                             |                                                          |                                                                         |
|----------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|---------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|
| <b>ENTER</b>                                             | <b>ENTER</b>                                                   | <b>ENTER</b>                           | <b>ENTER</b>                                | <b>ENTER</b>                                             | <b>ENTER</b>                                                            |
| Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | Exposure<br>duration,<br>$ED$<br>(yrs) | Exposure<br>frequency,<br>$EF$<br>(days/yr) | Target<br>risk for<br>carcinogens,<br>$TR$<br>(unitless) | Target hazard<br>quotient for<br>noncarcinogens,<br>$THQ$<br>(unitless) |
| 70                                                       | 25                                                             | 25                                     | 250                                         | 1.0E-06                                                  | 1                                                                       |

MORE  
↓

END

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 1.10E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 5.6E-08                                                                    | 3.9E-02                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

MESSAGE: Risk/HQ or risk-based groundwater concentration is based on a route-to-route extrapolation.

SCROLL  
DOWN  
TO "END"

END

## DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

Reset to  
Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

| ENTER                                                                              |  | ENTER                                                                             |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  |                                                                         |  |
|------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|--|-------------------------------------------------------------|--|-----------------------------------------------------|--|---------------------------------------------------------------------------|--|---------------------------------------------------------------------------|--|-------------------------------------------------------------------------|--|
| Chemical<br>CAS No.<br>(numbers only,<br>no dashes)                                |  | Initial<br>groundwater<br>conc.,<br>$C_w$<br>( $\mu\text{g/L}$ )                  |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  |                                                                         |  |
| 75014                                                                              |  | 1.00E+00                                                                          |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  |                                                                         |  |
|                                                                                    |  |                                                                                   |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  |                                                                         |  |
| ENTER                                                                              |  | ENTER                                                                             |  | ENTER                                                       |  | ENTER                                               |  | ENTER                                                                     |  | ENTER                                                                     |  | ENTER                                                                   |  |
| Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) |  | Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) |  | Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) |  | Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) |  | Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) |  | Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) |  | Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) |  |
| 22                                                                                 |  | 15                                                                                |  | 2590                                                        |  | 915                                                 |  | 1675                                                                      |  |                                                                           |  | B                                                                       |  |
|                                                                                    |  |                                                                                   |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  | SI                                                                      |  |
|                                                                                    |  |                                                                                   |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  |                                                                         |  |
|                                                                                    |  |                                                                                   |  |                                                             |  |                                                     |  |                                                                           |  |                                                                           |  | 1.00E-08                                                                |  |

MORE  
↓

| ENTER                         | ENTER                                                                       | ENTER                                                       | ENTER                                                                                        | ENTER                         | ENTER                                                                       | ENTER                                                       | ENTER                                                                                        | ENTER                         | ENTER                                                                       | ENTER                                                       | ENTER                                                                                        |
|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Stratum A<br>SCS<br>soil type | Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | Stratum B<br>SCS<br>soil type | Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | Stratum C<br>SCS<br>soil type | Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
| CL                            | 1.48                                                                        | 0.442                                                       | 0.168                                                                                        | SI                            | 1.35                                                                        | 0.489                                                       | 0.167                                                                                        |                               | 1.5                                                                         | 0.43                                                        | 0.3                                                                                          |

MORE  
↓

| ENTER                                                           | ENTER                                                                          | ENTER                                                  | ENTER                                                 | ENTER                                         | ENTER                                             | ENTER                                            | ENTER                                                                                          |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------|
| Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | Indoor<br>air exchange<br>rate,<br>$ER$<br>(1/h) | Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
| 10                                                              | 40                                                                             | 1000                                                   | 1000                                                  | 244                                           | 0.1                                               | 0.25                                             | 5                                                                                              |

MORE  
↓

| ENTER                                                    | ENTER                                                          | ENTER                                  | ENTER                                       | ENTER                                                    | ENTER                                                                   |
|----------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|---------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|
| Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | Exposure<br>duration,<br>$ED$<br>(yrs) | Exposure<br>frequency,<br>$EF$<br>(days/yr) | Target<br>risk for<br>carcinogens,<br>$TR$<br>(unitless) | Target hazard<br>quotient for<br>noncarcinogens,<br>$THQ$<br>(unitless) |
| 70                                                       | 30                                                             | 30                                     | 350                                         | 1.0E-06                                                  | 1                                                                       |

MORE  
↓

END

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 2.76E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1.3E-07                                                                    | 6.8E-04                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END



Appendix B-2  
Well MW-100B

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

67663 3.00E-01

Chemical

Chloroform

**ENTER**  
Average  
soil/  
groundwater  
temperature,  
 $T_s$   
( $^{\circ}\text{C}$ )

**ENTER**  
Depth  
below grade  
to bottom  
of enclosed  
space floor,  
 $L_F$   
(cm)

**ENTER**  
Depth  
below grade  
to water table,  
 $L_{WT}$   
(cm)

**ENTER**  
Totals must add up to value of  $L_{WT}$  (cell G28)

**ENTER**  
Thickness  
of soil  
stratum A,  
 $h_A$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum B,  
(Enter value or 0)  
 $h_B$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum C,  
(Enter value or 0)  
 $h_C$   
(cm)

**ENTER**  
Soil  
stratum  
directly above  
water table,  
(Enter A, B, or C)

**ENTER**  
SCS  
soil type  
directly above  
water table

**ENTER**  
Soil  
stratum A  
SCS  
soil type  
(used to estimate  
soil vapor  
permeability)

OR

**ENTER**  
User-defined  
stratum A  
soil vapor  
permeability,  
 $k_v$   
( $\text{cm}^2$ )

22 15 2526 548 1978 B SI CL

**ENTER**  
Stratum A  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum A  
soil dry  
bulk density,  
 $\rho_b^A$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum A  
soil total  
porosity,  
 $n^A$   
(unitless)

**ENTER**  
Stratum A  
soil water-filled  
porosity,  
 $\theta_w^A$   
( $\text{cm}^3/\text{cm}^3$ )

**ENTER**  
Stratum B  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum B  
soil dry  
bulk density,  
 $\rho_b^B$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum B  
soil total  
porosity,  
 $n^B$   
(unitless)

**ENTER**  
Stratum B  
soil water-filled  
porosity,  
 $\theta_w^B$   
( $\text{cm}^3/\text{cm}^3$ )

**ENTER**  
Stratum C  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum C  
soil dry  
bulk density,  
 $\rho_b^C$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum C  
soil total  
porosity,  
 $n^C$   
(unitless)

**ENTER**  
Stratum C  
soil water-filled  
porosity,  
 $\theta_w^C$   
( $\text{cm}^3/\text{cm}^3$ )

CL 1.48 0.442 0.168 SI 1.35 0.489 0.167 1.5 0.43 0.3

**ENTER**  
Enclosed  
space  
floor  
thickness,  
 $L_{crack}$   
(cm)

**ENTER**  
Soil-bldg.  
pressure  
differential,  
 $\Delta P$   
( $\text{g/cm-s}^2$ )

**ENTER**  
Enclosed  
space  
floor  
length,  
 $L_B$   
(cm)

**ENTER**  
Enclosed  
space  
floor  
width,  
 $W_B$   
(cm)

**ENTER**  
Enclosed  
space  
height,  
 $H_B$   
(cm)

**ENTER**  
Floor-wall  
seam crack  
width,  
 $w$   
(cm)

**ENTER**  
Indoor  
air exchange  
rate,  
ER  
(1/h)

**ENTER**  
Average vapor  
flow rate into bldg.  
OR  
Leave blank to calculate  
 $Q_{soil}$   
(L/m)

10 40 1000 1000 244 0.1 0.25 5

**ENTER**  
Averaging  
time for  
carcinogens,  
 $AT_C$   
(yrs)

**ENTER**  
Averaging  
time for  
noncarcinogens,  
 $AT_{NC}$   
(yrs)

**ENTER**  
Exposure  
duration,  
ED  
(yrs)

**ENTER**  
Exposure  
frequency,  
EF  
(days/yr)

**ENTER**  
Target  
risk for  
carcinogens,  
TR  
(unitless)

**ENTER**  
Target hazard  
quotient for  
noncarcinogens,  
THQ  
(unitless)

70 25 25 250 1.0E-06 1

END

Used to calculate risk-based  
groundwater concentration.



# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 7.92E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1.6E-08                                                                    | 2.0E-05                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

## DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

Reset to  
Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

56235 1.00E+00

Chemical

Carbon tetrachloride

**MORE**  
↓

| <b>ENTER</b><br>Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | <b>ENTER</b><br>Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | <b>ENTER</b><br>Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) | <b>ENTER</b><br>Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | <b>ENTER</b><br>SCS<br>soil type<br>directly above<br>water table | <b>ENTER</b><br>Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR | <b>ENTER</b><br>User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------|
| 22                                                                                                 | 15                                                                                                | 2526                                                                        | 548                                                                 | 1978                                                                                      |                                                                                           | B                                                                                       | SI                                                                | CL                                                                                                        |    |                                                                                                        |

**MORE**  
↓

| <b>ENTER</b><br>Stratum A<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | <b>ENTER</b><br>Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | <b>ENTER</b><br>Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | <b>ENTER</b><br>Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| CL                                                                         | 1.48                                                                                        | 0.442                                                                       | 0.168                                                                                                        | SI                                                                         | 1.35                                                                                        | 0.489                                                                       | 0.167                                                                                                        |                                                                            | 1.5                                                                                         | 0.43                                                                        | 0.3                                                                                                          |

**MORE**  
↓

| <b>ENTER</b><br>Enclosed<br>space<br>floor<br>thickness,<br>$L_{\text{crack}}$<br>(cm) | <b>ENTER</b><br>Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | <b>ENTER</b><br>Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | <b>ENTER</b><br>Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | <b>ENTER</b><br>Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{\text{soil}}$<br>(L/m) |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 10                                                                                     | 40                                                                                             | 1000                                                                   | 1000                                                                  | 244                                                           | 0.1                                                               | 0.25                                                           | 5                                                                                                                     |

**MORE**  
↓

| <b>ENTER</b><br>Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | <b>ENTER</b><br>Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | <b>ENTER</b><br>Exposure<br>duration,<br>ED<br>(yrs) | <b>ENTER</b><br>Exposure<br>frequency,<br>EF<br>(days/yr) | <b>ENTER</b><br>Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | <b>ENTER</b><br>Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 70                                                                       | 25                                                                             | 25                                                   | 250                                                       | 1.0E-06                                                                | 1                                                                                     |

**END**

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 7.93E+05                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 8.5E-08                                                                    | 3.9E-04                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

127184 1.09E+00

Chemical

Tetrachloroethylene

**MORE**  
↓

| <b>ENTER</b><br>Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | <b>ENTER</b><br>Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | <b>ENTER</b><br>Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) | <b>ENTER</b><br>Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | <b>ENTER</b><br>SCS<br>soil type<br>directly above<br>water table | <b>ENTER</b><br>Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR | <b>ENTER</b><br>User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------|
| 22                                                                                                 | 15                                                                                                | 2526                                                                        | 548                                                                 | 1978                                                                                      |                                                                                           | B                                                                                       | SI                                                                | CL                                                                                                        |    |                                                                                                        |

**MORE**  
↓

| <b>ENTER</b><br>Stratum A<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | <b>ENTER</b><br>Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | <b>ENTER</b><br>Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | <b>ENTER</b><br>Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| CL                                                                         | 1.48                                                                                        | 0.442                                                                       | 0.168                                                                                                        | SI                                                                         | 1.35                                                                                        | 0.489                                                                       | 0.167                                                                                                        |                                                                            | 1.5                                                                                         | 0.43                                                                        | 0.3                                                                                                          |

**MORE**  
↓

| <b>ENTER</b><br>Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | <b>ENTER</b><br>Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | <b>ENTER</b><br>Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | <b>ENTER</b><br>Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | <b>ENTER</b><br>Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 10                                                                              | 40                                                                                             | 1000                                                                   | 1000                                                                  | 244                                                           | 0.1                                                               | 0.25                                                           | 5                                                                                                              |

**MORE**  
↓

| <b>ENTER</b><br>Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | <b>ENTER</b><br>Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | <b>ENTER</b><br>Exposure<br>duration,<br>ED<br>(yrs) | <b>ENTER</b><br>Exposure<br>frequency,<br>EF<br>(days/yr) | <b>ENTER</b><br>Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | <b>ENTER</b><br>Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 70                                                                       | 25                                                                             | 25                                                   | 250                                                       | 1.0E-06                                                                | 1                                                                                     |

**END**

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 2.00E+05                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 2.2E-09                                                                    | 5.9E-04                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

## DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

79016      3.06E-01

Chemical

Trichloroethylene

**MORE**  
↓

| <b>ENTER</b><br>Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | <b>ENTER</b><br>Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | <b>ENTER</b><br>Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) | <b>ENTER</b><br>Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | <b>ENTER</b><br>SCS<br>soil type<br>directly above<br>water table | <b>ENTER</b><br>Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR | <b>ENTER</b><br>User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------|
| 22                                                                                                 | 15                                                                                                | 2526                                                                        | 548                                                                 | 1978                                                                                      |                                                                                           | B                                                                                       | SI                                                                | CL                                                                                                        |    |                                                                                                        |

**MORE**  
↓

| <b>ENTER</b><br>Stratum A<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | <b>ENTER</b><br>Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | <b>ENTER</b><br>Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | <b>ENTER</b><br>Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| CL                                                                         | 1.48                                                                                        | 0.442                                                                       | 0.168                                                                                                        | SI                                                                         | 1.35                                                                                        | 0.489                                                                       | 0.167                                                                                                        |                                                                            | 1.5                                                                                         | 0.43                                                                        | 0.3                                                                                                          |

**MORE**  
↓

| <b>ENTER</b><br>Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | <b>ENTER</b><br>Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | <b>ENTER</b><br>Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | <b>ENTER</b><br>Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | <b>ENTER</b><br>Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 10                                                                              | 40                                                                                             | 1000                                                                   | 1000                                                                  | 244                                                           | 0.1                                                               | 0.25                                                           | 5                                                                                                              |

**MORE**  
↓

| <b>ENTER</b><br>Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | <b>ENTER</b><br>Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | <b>ENTER</b><br>Exposure<br>duration,<br>ED<br>(yrs) | <b>ENTER</b><br>Exposure<br>frequency,<br>EF<br>(days/yr) | <b>ENTER</b><br>Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | <b>ENTER</b><br>Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 70                                                                       | 25                                                                             | 25                                                   | 250                                                       | 1.0E-06                                                                | 1                                                                                     |

**END**

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 1.10E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 3.0E-09                                                                    | 2.1E-03                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

MESSAGE: Risk/HQ or risk-based groundwater concentration is based on a route-to-route extrapolation.

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

| ENTER                                                                     |                                                                                            | ENTER                                                              |                                                           | Groundwater Vapor Emissions To Indoor Air<br>Commercial/Industrial Exposure Scenario<br>Moderate/Low Permeability Soil Scenario |  |                                                                         |                                                   |                                                                                           |                                                                                                  |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Chemical<br>CAS No.<br>(numbers only,<br>no dashes)                       |                                                                                            | Initial<br>groundwater<br>conc.,<br>C <sub>w</sub><br>(µg/L)       |                                                           |                                                                                                                                 |  |                                                                         |                                                   |                                                                                           |                                                                                                  |
| 75014                                                                     |                                                                                            | 1.01E+02                                                           |                                                           | Vinyl chloride (chloroethene)                                                                                                   |  |                                                                         |                                                   |                                                                                           |                                                                                                  |
| ENTER                                                                     | ENTER                                                                                      | ENTER                                                              | ENTER                                                     |                                                                                                                                 |  | ENTER                                                                   | ENTER                                             | ENTER                                                                                     | ENTER                                                                                            |
| Average<br>soil/<br>groundwater<br>temperature,<br>T <sub>s</sub><br>(°C) | Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>L <sub>F</sub><br>(cm) | Depth<br>below grade<br>to water table,<br>L <sub>WT</sub><br>(cm) | Totals must add up to value of L <sub>WT</sub> (cell G28) |                                                                                                                                 |  | Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | SCS<br>soil type<br>directly above<br>water table | Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | User-defined<br>stratum A<br>soil vapor<br>permeability,<br>k <sub>v</sub><br>(cm <sup>2</sup> ) |
| 22                                                                        | 15                                                                                         | 2526                                                               | 548                                                       | 1978                                                                                                                            |  | B                                                                       | SI                                                | CL                                                                                        |                                                                                                  |

MORE  
↓

| ENTER                         | ENTER                                                                                         | ENTER                                                                | ENTER                                                                                                             | ENTER                         | ENTER                                                                                         | ENTER                                                                | ENTER                                                                                                             | ENTER                         | ENTER                                                                                         | ENTER                                                                | ENTER                                                                                                             |
|-------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Stratum A<br>SCS<br>soil type | Stratum A<br>soil dry<br>bulk density,<br>ρ <sub>b</sub> <sup>A</sup><br>(g/cm <sup>3</sup> ) | Stratum A<br>soil total<br>porosity,<br>n <sup>A</sup><br>(unitless) | Stratum A<br>soil water-filled<br>porosity,<br>θ <sub>w</sub> <sup>A</sup><br>(cm <sup>3</sup> /cm <sup>3</sup> ) | Stratum B<br>SCS<br>soil type | Stratum B<br>soil dry<br>bulk density,<br>ρ <sub>b</sub> <sup>B</sup><br>(g/cm <sup>3</sup> ) | Stratum B<br>soil total<br>porosity,<br>n <sup>B</sup><br>(unitless) | Stratum B<br>soil water-filled<br>porosity,<br>θ <sub>w</sub> <sup>B</sup><br>(cm <sup>3</sup> /cm <sup>3</sup> ) | Stratum C<br>SCS<br>soil type | Stratum C<br>soil dry<br>bulk density,<br>ρ <sub>b</sub> <sup>C</sup><br>(g/cm <sup>3</sup> ) | Stratum C<br>soil total<br>porosity,<br>n <sup>C</sup><br>(unitless) | Stratum C<br>soil water-filled<br>porosity,<br>θ <sub>w</sub> <sup>C</sup><br>(cm <sup>3</sup> /cm <sup>3</sup> ) |
| CL                            | 1.48                                                                                          | 0.442                                                                | 0.168                                                                                                             | SI                            | 1.35                                                                                          | 0.489                                                                | 0.167                                                                                                             |                               | 1.5                                                                                           | 0.43                                                                 | 0.3                                                                                                               |

MORE  
↓

| ENTER                                                                  | ENTER                                                                   | ENTER                                                           | ENTER                                                          | ENTER                                                  | ENTER                                           | ENTER                                          | ENTER                                                                                                 |
|------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Enclosed<br>space<br>floor<br>thickness,<br>L <sub>crack</sub><br>(cm) | Soil-bldg.<br>pressure<br>differential,<br>ΔP<br>(g/cm-s <sup>2</sup> ) | Enclosed<br>space<br>floor<br>length,<br>L <sub>B</sub><br>(cm) | Enclosed<br>space<br>floor<br>width,<br>W <sub>B</sub><br>(cm) | Enclosed<br>space<br>height,<br>H <sub>B</sub><br>(cm) | Floor-wall<br>seam crack<br>width,<br>w<br>(cm) | Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>Q <sub>soil</sub><br>(L/m) |
| 10                                                                     | 40                                                                      | 1000                                                            | 1000                                                           | 244                                                    | 0.1                                             | 0.25                                           | 5                                                                                                     |

MORE  
↓

| ENTER                                                             | ENTER                                                                 | ENTER                                | ENTER                                     | ENTER                                                  | ENTER                                                                 |
|-------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------|
| Averaging<br>time for<br>carcinogens,<br>AT <sub>C</sub><br>(yrs) | Averaging<br>time for<br>noncarcinogens,<br>AT <sub>NC</sub><br>(yrs) | Exposure<br>duration,<br>ED<br>(yrs) | Exposure<br>frequency,<br>EF<br>(days/yr) | Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
| 70                                                                | 25                                                                    | 25                                   | 250                                       | 1.0E-06                                                | 1                                                                     |

MORE  
↓

END

Used to calculate risk-based  
groundwater concentration.



# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 2.76E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 7.9E-06                                                                    | 5.0E-02                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END



Appendix B-3  
Well PMW21-04

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

67663 1.57E-01

Chemical

Chloroform

**ENTER**  
Average  
soil/  
groundwater  
temperature,  
 $T_s$   
( $^{\circ}\text{C}$ )

**ENTER**  
Depth  
below grade  
to bottom  
of enclosed  
space floor,  
 $L_F$   
(cm)

**ENTER**  
Depth  
below grade  
to water table,  
 $L_{WT}$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum A,  
 $h_A$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum B,  
(Enter value or 0)  
 $h_B$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum C,  
(Enter value or 0)  
 $h_C$   
(cm)

**ENTER**  
Soil  
stratum  
directly above  
water table,  
(Enter A, B, or C)

**ENTER**  
SCS  
soil type  
directly above  
water table

**ENTER**  
Soil  
stratum A  
SCS  
soil type  
(used to estimate  
soil vapor  
permeability)

OR

**ENTER**  
User-defined  
stratum A  
soil vapor  
permeability,  
 $k_v$   
( $\text{cm}^2$ )

22 15 2545 793 1752 B SI CL

**ENTER**  
Stratum A  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum A  
soil dry  
bulk density,  
 $\rho_b^A$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum A  
soil total  
porosity,  
 $n^A$   
(unitless)

**ENTER**  
Stratum A  
soil water-filled  
porosity,  
 $\theta_w^A$   
( $\text{cm}^3/\text{cm}^3$ )

**ENTER**  
Stratum B  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum B  
soil dry  
bulk density,  
 $\rho_b^B$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum B  
soil total  
porosity,  
 $n^B$   
(unitless)

**ENTER**  
Stratum B  
soil water-filled  
porosity,  
 $\theta_w^B$   
( $\text{cm}^3/\text{cm}^3$ )

**ENTER**  
Stratum C  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum C  
soil dry  
bulk density,  
 $\rho_b^C$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum C  
soil total  
porosity,  
 $n^C$   
(unitless)

**ENTER**  
Stratum C  
soil water-filled  
porosity,  
 $\theta_w^C$   
( $\text{cm}^3/\text{cm}^3$ )

CL 1.48 0.442 0.168 SI 1.35 0.489 0.167 1.5 0.43 0.3

**ENTER**  
Enclosed  
space  
floor  
thickness,  
 $L_{\text{crack}}$   
(cm)

**ENTER**  
Soil-bldg.  
pressure  
differential,  
 $\Delta P$   
( $\text{g/cm-s}^2$ )

**ENTER**  
Enclosed  
space  
floor  
length,  
 $L_B$   
(cm)

**ENTER**  
Enclosed  
space  
floor  
width,  
 $W_B$   
(cm)

**ENTER**  
Enclosed  
space  
height,  
 $H_B$   
(cm)

**ENTER**  
Floor-wall  
seam crack  
width,  
 $w$   
(cm)

**ENTER**  
Indoor  
air exchange  
rate,  
ER  
(1/h)

**ENTER**  
Average vapor  
flow rate into bldg.  
OR  
Leave blank to calculate  
 $Q_{\text{soil}}$   
(L/m)

10 40 1000 1000 244 0.1 0.25 5

**ENTER**  
Averaging  
time for  
carcinogens,  
 $AT_C$   
(yrs)

**ENTER**  
Averaging  
time for  
noncarcinogens,  
 $AT_{NC}$   
(yrs)

**ENTER**  
Exposure  
duration,  
ED  
(yrs)

**ENTER**  
Exposure  
frequency,  
EF  
(days/yr)

**ENTER**  
Target  
risk for  
carcinogens,  
TR  
(unitless)

**ENTER**  
Target hazard  
quotient for  
noncarcinogens,  
THQ  
(unitless)

70 25 25 250 1.0E-06 1

END

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 7.92E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 8.3E-09                                                                    | 1.0E-05                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

56235 1.00E+00

Chemical

Carbon tetrachloride

**MORE**  
↓

| <b>ENTER</b><br>Average soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | <b>ENTER</b><br>Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | <b>ENTER</b><br>Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) | <b>ENTER</b><br>Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | <b>ENTER</b><br>SCS<br>soil type<br>directly above<br>water table | <b>ENTER</b><br>Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR | <b>ENTER</b><br>User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------|
| 22                                                                                              | 15                                                                                                | 2545                                                                        | 793                                                                 | 1752                                                                                      |                                                                                           | B                                                                                       | SI                                                                | CL                                                                                                        |    |                                                                                                        |

**MORE**  
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| <b>ENTER</b><br>Stratum A<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | <b>ENTER</b><br>Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | <b>ENTER</b><br>Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | <b>ENTER</b><br>Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| CL                                                                         | 1.48                                                                                        | 0.442                                                                       | 0.168                                                                                                        | SI                                                                         | 1.35                                                                                        | 0.489                                                                       | 0.167                                                                                                        |                                                                            | 1.5                                                                                         | 0.43                                                                        | 0.3                                                                                                          |

**MORE**  
↓

| <b>ENTER</b><br>Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | <b>ENTER</b><br>Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | <b>ENTER</b><br>Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | <b>ENTER</b><br>Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | <b>ENTER</b><br>Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 10                                                                              | 40                                                                                             | 1000                                                                   | 1000                                                                  | 244                                                           | 0.1                                                               | 0.25                                                           | 5                                                                                                              |

**MORE**  
↓

| <b>ENTER</b><br>Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | <b>ENTER</b><br>Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | <b>ENTER</b><br>Exposure<br>duration,<br>ED<br>(yrs) | <b>ENTER</b><br>Exposure<br>frequency,<br>EF<br>(days/yr) | <b>ENTER</b><br>Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | <b>ENTER</b><br>Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 70                                                                       | 25                                                                             | 25                                                   | 250                                                       | 1.0E-06                                                                | 1                                                                                     |

**END**

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 7.93E+05                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 8.3E-08                                                                    | 3.9E-04                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

127184 2.93E+02

Chemical

Tetrachloroethylene

**MORE**  
↓

|                                                                                                    |                                                                                                   |                                                                             |                                                                     |                                                                                           |                                                                                           |                                                                                         |                                                                   |                                                                                                           |    |                                                                                                        |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------|
| <b>ENTER</b><br>Average<br>soil/<br>groundwater<br>temperature,<br>$T_s$<br>( $^{\circ}\text{C}$ ) | <b>ENTER</b><br>Depth<br>below grade<br>to bottom<br>of enclosed<br>space floor,<br>$L_F$<br>(cm) | <b>ENTER</b><br>Depth<br>below grade<br>to water table,<br>$L_{WT}$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum A,<br>$h_A$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum B,<br>(Enter value or 0)<br>$h_B$<br>(cm) | <b>ENTER</b><br>Thickness<br>of soil<br>stratum C,<br>(Enter value or 0)<br>$h_C$<br>(cm) | <b>ENTER</b><br>Soil<br>stratum<br>directly above<br>water table,<br>(Enter A, B, or C) | <b>ENTER</b><br>SCS<br>soil type<br>directly above<br>water table | <b>ENTER</b><br>Soil<br>stratum A<br>SCS<br>soil type<br>(used to estimate<br>soil vapor<br>permeability) | OR | <b>ENTER</b><br>User-defined<br>stratum A<br>soil vapor<br>permeability,<br>$k_v$<br>( $\text{cm}^2$ ) |
| 22                                                                                                 | 15                                                                                                | 2545                                                                        | 793                                                                 | 1752                                                                                      |                                                                                           | B                                                                                       | SI                                                                | CL                                                                                                        |    |                                                                                                        |

**MORE**  
↓

|                                                                            |                                                                                             |                                                                             |                                                                                                              |                                                                            |                                                                                             |                                                                             |                                                                                                              |                                                                            |                                                                                             |                                                                             |                                                                                                              |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>ENTER</b><br>Stratum A<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum A<br>soil dry<br>bulk density,<br>$\rho_b^A$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum A<br>soil total<br>porosity,<br>$n^A$<br>(unitless) | <b>ENTER</b><br>Stratum A<br>soil water-filled<br>porosity,<br>$\theta_w^A$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum B<br>soil dry<br>bulk density,<br>$\rho_b^B$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum B<br>soil total<br>porosity,<br>$n^B$<br>(unitless) | <b>ENTER</b><br>Stratum B<br>soil water-filled<br>porosity,<br>$\theta_w^B$<br>( $\text{cm}^3/\text{cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>SCS<br>soil type<br>Lookup Soil<br>Parameters | <b>ENTER</b><br>Stratum C<br>soil dry<br>bulk density,<br>$\rho_b^C$<br>( $\text{g/cm}^3$ ) | <b>ENTER</b><br>Stratum C<br>soil total<br>porosity,<br>$n^C$<br>(unitless) | <b>ENTER</b><br>Stratum C<br>soil water-filled<br>porosity,<br>$\theta_w^C$<br>( $\text{cm}^3/\text{cm}^3$ ) |
| CL                                                                         | 1.48                                                                                        | 0.442                                                                       | 0.168                                                                                                        | SI                                                                         | 1.35                                                                                        | 0.489                                                                       | 0.167                                                                                                        |                                                                            | 1.5                                                                                         | 0.43                                                                        | 0.3                                                                                                          |

**MORE**  
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|                                                                                 |                                                                                                |                                                                        |                                                                       |                                                               |                                                                   |                                                                |                                                                                                                |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>ENTER</b><br>Enclosed<br>space<br>floor<br>thickness,<br>$L_{crack}$<br>(cm) | <b>ENTER</b><br>Soil-bldg.<br>pressure<br>differential,<br>$\Delta P$<br>( $\text{g/cm-s}^2$ ) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>length,<br>$L_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>floor<br>width,<br>$W_B$<br>(cm) | <b>ENTER</b><br>Enclosed<br>space<br>height,<br>$H_B$<br>(cm) | <b>ENTER</b><br>Floor-wall<br>seam crack<br>width,<br>$w$<br>(cm) | <b>ENTER</b><br>Indoor<br>air exchange<br>rate,<br>ER<br>(1/h) | <b>ENTER</b><br>Average vapor<br>flow rate into bldg.<br>OR<br>Leave blank to calculate<br>$Q_{soil}$<br>(L/m) |
| 10                                                                              | 40                                                                                             | 1000                                                                   | 1000                                                                  | 244                                                           | 0.1                                                               | 0.25                                                           | 5                                                                                                              |

**MORE**  
↓

|                                                                          |                                                                                |                                                      |                                                           |                                                                        |                                                                                       |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>ENTER</b><br>Averaging<br>time for<br>carcinogens,<br>$AT_C$<br>(yrs) | <b>ENTER</b><br>Averaging<br>time for<br>noncarcinogens,<br>$AT_{NC}$<br>(yrs) | <b>ENTER</b><br>Exposure<br>duration,<br>ED<br>(yrs) | <b>ENTER</b><br>Exposure<br>frequency,<br>EF<br>(days/yr) | <b>ENTER</b><br>Target<br>risk for<br>carcinogens,<br>TR<br>(unitless) | <b>ENTER</b><br>Target hazard<br>quotient for<br>noncarcinogens,<br>THQ<br>(unitless) |
| 70                                                                       | 25                                                                             | 25                                                   | 250                                                       | 1.0E-06                                                                | 1                                                                                     |

**END**

Used to calculate risk-based  
groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 2.00E+05                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 5.8E-07                                                                    | 1.6E-01                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END



DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

X

|                                                           |                                                                          |                                                              |                                                                                                     |                                                                                                                                                                                                                          |                                                                     |                                                             |                                          |                                                                                                                                                                                                     |  |  |  |
|-----------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| <b>ENTER</b>                                              |                                                                          | <b>ENTER</b>                                                 |                                                                                                     | <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Groundwater Vapor Emissions To Indoor Air<br/>Commercial/Industrial Exposure Scenario<br/>Moderate/Low Permeability Soil Scenario</b> </div> |                                                                     |                                                             |                                          |                                                                                                                                                                                                     |  |  |  |
| Chemical<br>CAS No.<br>(numbers only,<br>no dashes)       |                                                                          | Initial<br>groundwater<br>conc.,<br>C <sub>w</sub><br>(µg/L) |                                                                                                     |                                                                                                                                                                                                                          |                                                                     |                                                             |                                          |                                                                                                                                                                                                     |  |  |  |
| 79016                                                     |                                                                          | 1.22E+02                                                     |                                                                                                     |                                                                                                                                                                                                                          |                                                                     |                                                             |                                          |                                                                                                                                                                                                     |  |  |  |
| Chemical                                                  |                                                                          |                                                              |                                                                                                     |                                                                                                                                                                                                                          |                                                                     |                                                             |                                          |                                                                                                                                                                                                     |  |  |  |
| Trichloroethylene                                         |                                                                          |                                                              |                                                                                                     |                                                                                                                                                                                                                          |                                                                     |                                                             |                                          |                                                                                                                                                                                                     |  |  |  |
| <b>ENTER</b>                                              | <b>ENTER</b>                                                             | <b>ENTER</b>                                                 | <b>ENTER</b> <b>ENTER</b> <b>ENTER</b><br>Totals must add up to value of L <sub>WT</sub> (cell G28) |                                                                                                                                                                                                                          |                                                                     | <b>ENTER</b>                                                | <b>ENTER</b>                             | <b>ENTER</b> <b>ENTER</b><br>Soil stratum A SCS soil type (used to estimate soil vapor permeability)      OR      User-defined stratum A soil vapor permeability, k <sub>v</sub> (cm <sup>2</sup> ) |  |  |  |
| Average soil/groundwater temperature, T <sub>s</sub> (°C) | Depth below grade to bottom of enclosed space floor, L <sub>F</sub> (cm) | Depth below grade to water table, L <sub>WT</sub> (cm)       | Thickness of soil stratum A, h <sub>A</sub> (cm)                                                    | Thickness of soil stratum B, (Enter value or 0) h <sub>B</sub> (cm)                                                                                                                                                      | Thickness of soil stratum C, (Enter value or 0) h <sub>C</sub> (cm) | Soil stratum directly above water table, (Enter A, B, or C) | SCS soil type directly above water table |                                                                                                                                                                                                     |  |  |  |
| 22                                                        | 15                                                                       | 2545                                                         | 793                                                                                                 | 1752                                                                                                                                                                                                                     |                                                                     | B                                                           | SI                                       | CL                                                                                                                                                                                                  |  |  |  |

MORE  
↓

|                         |                                                                                   |                                                          |                                                                                                       |                         |                                                                                   |                                                          |                                                                                                       |                         |                                                                                   |                                                          |                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>ENTER</b>            | <b>ENTER</b>                                                                      | <b>ENTER</b>                                             | <b>ENTER</b>                                                                                          | <b>ENTER</b>            | <b>ENTER</b>                                                                      | <b>ENTER</b>                                             | <b>ENTER</b>                                                                                          | <b>ENTER</b>            | <b>ENTER</b>                                                                      | <b>ENTER</b>                                             | <b>ENTER</b>                                                                                          |
| Stratum A SCS soil type | Stratum A soil dry bulk density, ρ <sub>b</sub> <sup>A</sup> (g/cm <sup>3</sup> ) | Stratum A soil total porosity, n <sup>A</sup> (unitless) | Stratum A soil water-filled porosity, θ <sub>w</sub> <sup>A</sup> (cm <sup>3</sup> /cm <sup>3</sup> ) | Stratum B SCS soil type | Stratum B soil dry bulk density, ρ <sub>b</sub> <sup>B</sup> (g/cm <sup>3</sup> ) | Stratum B soil total porosity, n <sup>B</sup> (unitless) | Stratum B soil water-filled porosity, θ <sub>w</sub> <sup>B</sup> (cm <sup>3</sup> /cm <sup>3</sup> ) | Stratum C SCS soil type | Stratum C soil dry bulk density, ρ <sub>b</sub> <sup>C</sup> (g/cm <sup>3</sup> ) | Stratum C soil total porosity, n <sup>C</sup> (unitless) | Stratum C soil water-filled porosity, θ <sub>w</sub> <sup>C</sup> (cm <sup>3</sup> /cm <sup>3</sup> ) |
| Lookup Soil Parameters  |                                                                                   |                                                          |                                                                                                       | Lookup Soil Parameters  |                                                                                   |                                                          |                                                                                                       | Lookup Soil Parameters  |                                                                                   |                                                          |                                                                                                       |
| CL                      | 1.48                                                                              | 0.442                                                    | 0.168                                                                                                 | SI                      | 1.35                                                                              | 0.489                                                    | 0.167                                                                                                 |                         | 1.5                                                                               | 0.43                                                     | 0.3                                                                                                   |

MORE  
↓

|                                                         |                                                             |                                                  |                                                 |                                            |                                     |                                    |                                                                                                              |
|---------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|--------------------------------------------|-------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>ENTER</b>                                            | <b>ENTER</b>                                                | <b>ENTER</b>                                     | <b>ENTER</b>                                    | <b>ENTER</b>                               | <b>ENTER</b>                        | <b>ENTER</b>                       | <b>ENTER</b>                                                                                                 |
| Enclosed space floor thickness, L <sub>crack</sub> (cm) | Soil-bldg. pressure differential, ΔP (g/cm-s <sup>2</sup> ) | Enclosed space floor length, L <sub>B</sub> (cm) | Enclosed space floor width, W <sub>B</sub> (cm) | Enclosed space height, H <sub>B</sub> (cm) | Floor-wall seam crack width, w (cm) | Indoor air exchange rate, ER (1/h) | <b>ENTER</b><br>Average vapor flow rate into bldg.<br>OR<br>Leave blank to calculate Q <sub>soil</sub> (L/m) |
| 10                                                      | 40                                                          | 1000                                             | 1000                                            | 244                                        | 0.1                                 | 0.25                               | 5                                                                                                            |

MORE  
↓

|                                                       |                                                           |                             |                                  |                                            |                                                           |
|-------------------------------------------------------|-----------------------------------------------------------|-----------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------------------|
| <b>ENTER</b>                                          | <b>ENTER</b>                                              | <b>ENTER</b>                | <b>ENTER</b>                     | <b>ENTER</b>                               | <b>ENTER</b>                                              |
| Averaging time for carcinogens, AT <sub>C</sub> (yrs) | Averaging time for noncarcinogens, AT <sub>NC</sub> (yrs) | Exposure duration, ED (yrs) | Exposure frequency, EF (days/yr) | Target risk for carcinogens, TR (unitless) | Target hazard quotient for noncarcinogens, THQ (unitless) |
| 70                                                    | 25                                                        | 25                          | 250                              | 1.0E-06                                    | 1                                                         |

MORE  
↓

END

Used to calculate risk-based groundwater concentration.

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 1.10E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1.2E-06                                                                    | 8.1E-01                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

MESSAGE: Risk/HQ or risk-based groundwater concentration is based on a route-to-route extrapolation.

SCROLL  
DOWN  
TO "END"

END

DATA ENTRY SHEET

GW-ADV  
Version 3.0; 02/03

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES

**ENTER**  
Chemical  
CAS No.  
(numbers only,  
no dashes)

**ENTER**  
Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

**Groundwater Vapor Emissions To Indoor Air  
Commercial/Industrial Exposure Scenario  
Moderate/Low Permeability Soil Scenario**

75014 1.00E+00

Vinyl chloride (chloroethene)

**ENTER**  
Average  
soil/  
groundwater  
temperature,  
 $T_s$   
( $^{\circ}\text{C}$ )

**ENTER**  
Depth  
below grade  
to bottom  
of enclosed  
space floor,  
 $L_F$   
(cm)

**ENTER**  
Depth  
below grade  
to water table,  
 $L_{WT}$   
(cm)

**ENTER**  
Totals must add up to value of  $L_{WT}$  (cell G28)

**ENTER**  
Thickness  
of soil  
stratum A,  
 $h_A$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum B,  
(Enter value or 0)  
 $h_B$   
(cm)

**ENTER**  
Thickness  
of soil  
stratum C,  
(Enter value or 0)  
 $h_C$   
(cm)

**ENTER**  
Soil  
stratum  
directly above  
water table,  
(Enter A, B, or C)

**ENTER**  
SCS  
soil type  
directly above  
water table

**ENTER**  
Soil  
stratum A  
SCS  
soil type  
(used to estimate  
soil vapor  
permeability)

OR

**ENTER**  
User-defined  
stratum A  
soil vapor  
permeability,  
 $k_v$   
( $\text{cm}^2$ )

22 15 2545 793 1752 B SI CL

**ENTER**  
Stratum A  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum A  
soil dry  
bulk density,  
 $\rho_b^A$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum A  
soil total  
porosity,  
 $n^A$   
(unitless)

**ENTER**  
Stratum A  
soil water-filled  
porosity,  
 $\theta_w^A$   
( $\text{cm}^3/\text{cm}^3$ )

**ENTER**  
Stratum B  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum B  
soil dry  
bulk density,  
 $\rho_b^B$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum B  
soil total  
porosity,  
 $n^B$   
(unitless)

**ENTER**  
Stratum B  
soil water-filled  
porosity,  
 $\theta_w^B$   
( $\text{cm}^3/\text{cm}^3$ )

**ENTER**  
Stratum C  
SCS  
soil type  
Lookup Soil  
Parameters

**ENTER**  
Stratum C  
soil dry  
bulk density,  
 $\rho_b^C$   
( $\text{g/cm}^3$ )

**ENTER**  
Stratum C  
soil total  
porosity,  
 $n^C$   
(unitless)

**ENTER**  
Stratum C  
soil water-filled  
porosity,  
 $\theta_w^C$   
( $\text{cm}^3/\text{cm}^3$ )

CL 1.48 0.442 0.168 SI 1.35 0.489 0.167 1.5 0.43 0.3

**ENTER**  
Enclosed  
space  
floor  
thickness,  
 $L_{crack}$   
(cm)

**ENTER**  
Soil-bldg.  
pressure  
differential,  
 $\Delta P$   
( $\text{g/cm-s}^2$ )

**ENTER**  
Enclosed  
space  
floor  
length,  
 $L_B$   
(cm)

**ENTER**  
Enclosed  
space  
floor  
width,  
 $W_B$   
(cm)

**ENTER**  
Enclosed  
space  
height,  
 $H_B$   
(cm)

**ENTER**  
Floor-wall  
seam crack  
width,  
 $w$   
(cm)

**ENTER**  
Indoor  
air exchange  
rate,  
ER  
(1/h)

**ENTER**  
Average vapor  
flow rate into bldg.  
OR  
Leave blank to calculate  
 $Q_{soil}$   
(L/m)

10 40 1000 1000 244 0.1 0.25 5

**ENTER**  
Averaging  
time for  
carcinogens,  
 $AT_C$   
(yrs)

**ENTER**  
Averaging  
time for  
noncarcinogens,  
 $AT_{NC}$   
(yrs)

**ENTER**  
Exposure  
duration,  
ED  
(yrs)

**ENTER**  
Exposure  
frequency,  
EF  
(days/yr)

**ENTER**  
Target  
risk for  
carcinogens,  
TR  
(unitless)

**ENTER**  
Target hazard  
quotient for  
noncarcinogens,  
THQ  
(unitless)

70 25 25 250 1.0E-06 1

Used to calculate risk-based  
groundwater concentration.

END

# DATA ENTRY SHEET

## RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

| Indoor exposure groundwater conc., carcinogen (µg/L) | Indoor exposure groundwater conc., noncarcinogen (µg/L) | Risk-based indoor exposure groundwater conc., (µg/L) | Pure component water solubility, S (µg/L) | Final indoor exposure groundwater conc., (µg/L) |
|------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
| NA                                                   | NA                                                      | NA                                                   | 2.76E+06                                  | NA                                              |

## INCREMENTAL RISK CALCULATIONS:

| Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) | Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless) |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 7.7E-08                                                                    | 4.9E-04                                                                      |

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

A decorative graphic on the left side of the page consists of several overlapping rectangles. A large red rectangle is positioned in the middle-left. Above it, a dark gray rectangle extends from the top edge. Below the red rectangle, a light gray rectangle extends from the bottom edge. To the right of the red rectangle, a black rectangle is positioned at the bottom. The text 'D' is located to the right of the red rectangle.

# D

Attachment D

Groundwater Core of the  
Plume Evaluation

#### **ATTACHMENT D TABLE OF CONTENTS:**

|                   |                                                                                                                                                                     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Table D.1</b>  | <b>RAGS Table 3s - Exposure Point Concentration Summary for Groundwater - Core of the Plume – Fluvial Aquifer</b>                                                   |
| <b>Table D.2</b>  | <b>RAGS Table 3s - Exposure Point Concentration Summary for Groundwater - Core of the Plume – Intermediate Aquifer</b>                                              |
| <b>Table D.3</b>  | <b>RAGS Table 4s Supplement - Calculation of DA-Event for Dermal Exposure to Groundwater - Core of the Plume – Fluvial Aquifer</b>                                  |
| <b>Table D.4</b>  | <b>RAGS Table 4s Supplement - Calculation of DA-Event for Dermal Exposure to Groundwater - Core of the Plume – Intermediate Aquifer</b>                             |
| <b>Table D.5</b>  | <b>RAGS Table 4s Supplement - Bathroom Air Concentrations from Exposure to Tapwater for a Resident using Groundwater - Core of the Plume – Fluvial Aquifer</b>      |
| <b>Table D.6</b>  | <b>RAGS Table 4s Supplement - Bathroom Air Concentrations from Exposure to Tapwater for a Resident using Groundwater - Core of the Plume – Intermediate Aquifer</b> |
| <b>Table D.7</b>  | <b>RAGS Table 7s - Calculation of COPC Cancer Risks and Noncancer Hazards for a Worker using Groundwater - Core of the Plume – Fluvial Aquifer</b>                  |
| <b>Table D.8</b>  | <b>RAGS Table 7s - Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident using Groundwater - Core of the Plume – Fluvial Aquifer</b>                |
| <b>Table D.9</b>  | <b>RAGS Table 7s - Calculation of COPC Cancer Risks and Noncancer Hazards for a Worker using Groundwater - Core of the Plume – Intermediate Aquifer</b>             |
| <b>Table D.10</b> | <b>RAGS Table 7s - Calculation of COPC Cancer Risks and Noncancer Hazards for a Resident using Groundwater - Core of the Plume – Intermediate Aquifer</b>           |
| <b>Table D.11</b> | <b>ProUCL Input for Groundwater - Core of the Plume</b>                                                                                                             |
| <b>Table D.12</b> | <b>ProUCL Output for Groundwater - Core of the Plume – Fluvial Aquifer</b>                                                                                          |
| <b>Table D.13</b> | <b>ProUCL Output for Groundwater - Core of the Plume – Intermediate Aquifer</b>                                                                                     |

TABLE D.1  
EXPOSURE POINT CONCENTRATION SUMMARY FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater

| T or D | COPC Group | COPC                             | CASRN     | Aquifer-Specific COPC | Maximum Detected Concentration (ug/L) | Qual | 95% UCL (ug/L) | 95% UCL Method         | ProUCL Notes | Sample Count | Detect Count | Detection Frequency (%) | Exposure Point Concentration (EPC) |           |                          |
|--------|------------|----------------------------------|-----------|-----------------------|---------------------------------------|------|----------------|------------------------|--------------|--------------|--------------|-------------------------|------------------------------------|-----------|--------------------------|
|        |            |                                  |           |                       |                                       |      |                |                        |              |              |              |                         | Value (ug/L)                       | Statistic | Rationale                |
| T      | VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | Yes                   | 2.4                                   |      | 1.645          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 1.645                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,1-Dichloroethene               | 75-35-4   | Yes                   | 13.6                                  |      | 8.724          | 95% H-UCL              |              | 10           | 10           | 100                     | 8.724                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Yes                   | 83.3                                  |      | 72.43          | 95% H-UCL              |              | 9            | 9            | 100                     | 72.43                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | Yes                   | 142                                   |      | 62.02          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 62.02                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2-Dichloroethane               | 107-06-2  | Yes                   | 14.7                                  |      | 12.48          | 95% Student's-t UCL    |              | 6            | 6            | 100                     | 12.48                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | 1,2-Dichloropropane              | 78-87-5   | Yes                   | 44                                    | J    | 25.84          | 95% Student's-t UCL    |              | 7            | 7            | 100                     | 25.84                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Acetone                          | 67-64-1   | Yes                   | 7,790                                 |      | 5022           | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 5,022                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Carbon tetrachloride             | 56-23-5   | Yes                   | 196                                   |      | 137.7          | 95% Student's-t UCL    |              | 9            | 9            | 100                     | 137.7                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Chloroform                       | 67-66-3   | Yes                   | 22,100                                |      | 23316          | 95% Adjusted Gamma UCL | i            | 10           | 10           | 100                     | 22,100                             | Max       | Lower of UCL and maximum |
| T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | Yes                   | 323                                   |      | 233.9          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 233.9                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | Yes                   | 20,800                                |      | 14183          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 14,183                             | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | Yes                   | 78.2                                  |      | 60.02          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 60.02                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methylene chloride               | 75-09-2   | Yes                   | 177                                   | J    | 97.85          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 97.85                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Tetrachloroethylene              | 127-18-4  | Yes                   | 300                                   |      | 271.8          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 271.8                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Toluene                          | 108-88-3  | Yes                   | 149                                   |      | 64.96          | 95% H-UCL              |              | 10           | 10           | 100                     | 64.96                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Trichloroethylene                | 79-01-6   | Yes                   | 286                                   |      | 192.2          | 95% Student's-t UCL    |              | 10           | 10           | 100                     | 192.2                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Vinyl chloride                   | 75-01-4   | Yes                   | 188                                   |      | 138.2          | 95% Adjusted Gamma UCL |              | 10           | 10           | 100                     | 138.2                              | UCL       | Lower of UCL and maximum |

#### Notes:

These EPCs for groundwater will be used in the resident, worker and construction worker scenarios. Only unfiltered (total) groundwater data are evaluated.  
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.  
The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance.

#### Abbreviations:

COPC -- Constituent of potential concern  
EPC -- Exposure point concentration  
Qual -- Qualifier  
NA -- Not analyzed or applicable  
ND -- Not detected  
UCL -- 95% Upper confidence limit

#### References:

USEPA. 2016. ProUCL Version 5.1. September 19. Available online: <https://www.epa.gov/land-research/proUCL-software>  
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: <https://www.epa.gov/land-research/proUCL-version-5100-documentation-downloads>

#### ProUCL Notes and Warnings:

i Suggested UCL exceeds the maximum observation.

TABLE D.2  
EXPOSURE POINT CONCENTRATION SUMMARY FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE/UPPER CLAIBORNE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater

| T or D | COPC Group | COPC                             | CASRN    | Aquifer-Specific COPC | Maximum Detected Concentration (ug/L) | Qual | 95% UCL (ug/L) | 95% UCL Method               | ProUCL Notes | Sample Count | Detect Count | Detection Frequency (%) | Exposure Point Concentration (EPC) |           |                          |
|--------|------------|----------------------------------|----------|-----------------------|---------------------------------------|------|----------------|------------------------------|--------------|--------------|--------------|-------------------------|------------------------------------|-----------|--------------------------|
|        |            |                                  |          |                       |                                       |      |                |                              |              |              |              |                         | Value (ug/L)                       | Statistic | Rationale                |
| T      | VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5  | Yes                   | 0.538                                 |      | 0.429          | 95% Modified-t UCL           |              | 6            | 6            | 100                     | 0.429                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Carbon tetrachloride             | 56-23-5  | Yes                   | 1.19                                  |      | 1.083          | 95% Student's-t UCL          |              | 10           | 10           | 100                     | 1.083                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Chloroform                       | 67-66-3  | Yes                   | 11                                    |      | 11.52          | 95% Chebyshev (Mean, Sd) UCL | i            | 10           | 10           | 100                     | 11                                 | Max       | Lower of UCL and maximum |
| T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2 | Yes                   | 27.6                                  |      | 20.02          | 95% Student's-t UCL          |              | 10           | 10           | 100                     | 20.02                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | Yes                   | 2,910                                 |      | 3305           | 95% Student's-t UCL          | i            | 4            | 4            | 100                     | 2910                               | Max       | Lower of UCL and maximum |
| T      | VOC        | Tetrachloroethylene              | 127-18-4 | Yes                   | 127                                   |      | 87.8           | 95% Student's-t UCL          |              | 10           | 10           | 100                     | 87.8                               | UCL       | Lower of UCL and maximum |
| T      | VOC        | Trichloroethylene                | 79-01-6  | Yes                   | 37.1                                  |      | 28.33          | 95% Student's-t UCL          |              | 10           | 10           | 100                     | 28.33                              | UCL       | Lower of UCL and maximum |
| T      | VOC        | Vinyl chloride                   | 75-01-4  | Yes                   | 7.98                                  | J    | 5.613          | 95% Adjusted Gamma UCL       |              | 8            | 8            | 100                     | 5.613                              | UCL       | Lower of UCL and maximum |

**Notes:**

These EPCs for groundwater will be used in the resident, worker and construction worker scenarios. Only unfiltered (total) groundwater data are evaluated.

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.

The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance.

**Abbreviations:**

COPC -- Constituent of potential concern

EPC -- Exposure point concentration

Qual -- Qualifier

NA -- Not analyzed or applicable

ND -- Not detected

UCL -- 95% Upper confidence limit

**References:**

USEPA. 2016. ProUCL Version 5.1. September 19. Available online: <https://www.epa.gov/land-research/proucl-software>

USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: <https://www.epa.gov/land-research/proucl-version-5100-documentation-downloads>

**ProUCL Notes and Warnings:**

i Suggested UCL exceeds the maximum observation.



TABLE D.3  
CALCULATION OF DA-EVENT FOR DERMAL EXPOSURE TO GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | Casrn     | EPC<br>(1) | Permeability<br>Coefficient | Ratio of<br>Permeability<br>Coefficients | Lag Time           | Time to Reach<br>Steady State | Fraction<br>Absorbed | Duration of Event<br>(t-event) |                   |                                | DA-event     |     |                |     |                             |     |
|------------|----------------------------------|-----------|------------|-----------------------------|------------------------------------------|--------------------|-------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|--------------|-----|----------------|-----|-----------------------------|-----|
|            |                                  |           | Cw         | K <sub>p</sub>              | B                                        | T <sub>event</sub> | t*                            | FA                   | Worker                         | Resident<br>Adult | Resident<br>Child<br>(0-6 yrs) | Worker       |     | Resident Adult |     | Resident Child<br>(0-6 yrs) |     |
|            |                                  |           | ug/L       | cm/hr                       | unitless                                 | hr/event           | hr                            | unitless             | hr/event                       | hr/event          | hr/event                       | mg/cm2-event | Egn | mg/cm2-event   | Egn | mg/cm2-event                | Egn |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | 1.645      | 0.007                       | 0.035                                    | 0.92               | 2.20                          | 1                    | 1                              | 0.71              | 0.54                           | 3.0E-08      | 2   | 2.5E-08        | 2   | 2.2E-08                     | 2   |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | 8.724      | 0.0117                      | 0.044                                    | 0.37               | 0.88                          | 1                    | 1                              | 0.71              | 0.54                           | 1.8E-07      | 3   | 1.4E-07        | 2   | 1.3E-07                     | 2   |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | 72.43      | 0.008                       | 0.035                                    | 0.70               | 1.69                          | 1                    | 1                              | 0.71              | 0.54                           | 1.3E-06      | 2   | 1.1E-06        | 2   | 9.3E-07                     | 2   |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | 62.02      | 0.086                       | 0.36                                     | 0.50               | 1.19                          | 1                    | 1                              | 0.71              | 0.54                           | 1.0E-05      | 2   | 8.7E-06        | 2   | 7.6E-06                     | 2   |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | 12.48      | 0.004                       | 0.02                                     | 0.38               | 0.90                          | 1                    | 1                              | 0.71              | 0.54                           | 9.2E-08      | 3   | 7.5E-08        | 2   | 6.5E-08                     | 2   |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | 25.84      | 0.0075                      | 0.031                                    | 0.45               | 1.08                          | 1                    | 1                              | 0.71              | 0.54                           | 3.6E-07      | 2   | 3.0E-07        | 2   | 2.7E-07                     | 2   |
| VOC        | Acetone                          | 67-64-1   | 5022       | 0.001                       | 0.00                                     | 0.22               | 0.53                          | 1                    | 1                              | 0.71              | 0.54                           | 3.7E-06      | 3   | 3.0E-06        | 3   | 2.5E-06                     | 3   |
| VOC        | Carbon tetrachloride             | 56-23-5   | 137.7      | 0.01630                     | 0.0778                                   | 0.76               | 1.83                          | 1                    | 1                              | 0.71              | 0.54                           | 5.4E-06      | 2   | 4.6E-06        | 2   | 4.0E-06                     | 2   |
| VOC        | Chloroform                       | 67-66-3   | 22100      | 0.007                       | 0.029                                    | 0.49               | 1.18                          | 1                    | 1                              | 0.71              | 0.54                           | 2.9E-04      | 2   | 2.5E-04        | 2   | 2.1E-04                     | 2   |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | 233.9      | 0.011                       | 0.04                                     | 0.37               | 0.88                          | 1                    | 1                              | 0.71              | 0.54                           | 4.4E-06      | 3   | 3.6E-06        | 2   | 3.2E-06                     | 2   |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | 14183      | 0.0010                      | 0.003                                    | 0.27               | 0.64                          | 1                    | 1                              | 0.71              | 0.54                           | 2.1E-05      | 3   | 1.7E-05        | 3   | 1.4E-05                     | 2   |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | 60.02      | 0.002                       | 0.008                                    | 0.33               | 0.79                          | 1                    | 1                              | 0.71              | 0.54                           | 2.1E-07      | 3   | 1.7E-07        | 2   | 1.5E-07                     | 2   |
| VOC        | Methylene chloride               | 75-09-2   | 97.85      | 0.004                       | 0.01                                     | 0.31               | 0.75                          | 1                    | 1                              | 0.71              | 0.54                           | 5.6E-07      | 3   | 4.5E-07        | 2   | 3.9E-07                     | 2   |
| VOC        | Tetrachloroethylene              | 127-18-4  | 271.8      | 0.033                       | 0.17                                     | 0.89               | 2.14                          | 1                    | 1                              | 0.71              | 0.54                           | 2.4E-05      | 2   | 2.0E-05        | 2   | 1.7E-05                     | 2   |
| VOC        | Toluene                          | 108-88-3  | 64.98      | 0.0311                      | 0.11                                     | 0.35               | 0.83                          | 1                    | 1                              | 0.71              | 0.54                           | 3.4E-06      | 3   | 2.8E-06        | 2   | 2.4E-06                     | 2   |
| VOC        | Trichloroethylene                | 79-01-6   | 192.2      | 0.0116                      | 0.051                                    | 0.57               | 1.37                          | 1                    | 1                              | 0.71              | 0.54                           | 4.7E-06      | 2   | 3.9E-06        | 2   | 3.4E-06                     | 2   |
| VOC        | Vinyl chloride                   | 75-01-4   | 138.2      | 0.008                       | 0.03                                     | 0.24               | 0.57                          | 1                    | 1                              | 0.71              | 0.54                           | 1.7E-06      | 3   | 1.4E-06        | 3   | 1.1E-06                     | 2   |

|                                                                         |                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equations:</b>                                                       |                                                                                                                                                                                                                                                |
| Inorganics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 1) | DA <sub>event</sub> =<br>K <sub>p</sub> x C <sub>w</sub> x t <sub>event</sub> x CF1 x CF2<br>where CF1 = 0.001 mg/ug and CF2 = 0.001 L/cm <sup>3</sup>                                                                                         |
| Organics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>(Eq 2)   | t <sub>event</sub> ≤ t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>2 x FA x K <sub>p</sub> x C <sub>w</sub> x (sqrt((6 x t <sub>event</sub> x t <sub>event</sub> ) / (π))) x CF1 x CF2                                              |
| (Eq 3)                                                                  | t <sub>event</sub> > t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =<br>FA x K <sub>p</sub> x C <sub>w</sub> x (t <sub>event</sub> / ((1+B) + 2 x t <sub>event</sub> x ((1 + 3B + 3B <sup>2</sup> ) / (1+B) <sup>2</sup> ))) x CF1 x CF2 |

**Note:**  
(1) The EPC is the lower of the 95% upper confidence limit and maximum detected concentration. See Table 3s.  
The dermal parameters were taken from the chemical parameter table of the USEPA June 2017 RSL tables and RAGS Part E.

**Abbreviations:**  
CF1 -- Conversion Factor 1 (0.001 mg/ug)  
CF2 -- Conversion Factor 2 (0.001 L/cm<sup>3</sup>)  
C<sub>w</sub> -- Groundwater or surface water concentration  
VOC -- Volatile organic compound

**Reference:**  
USEPA. 2004. Risk Assessment Guidance for Superfund (RAGS) Volume I: Human Health Evaluation Manual. Part E Supplemental Guidance for Dermal Risk Assessment. Final. USEPA/540/R/99/005. July. Available online: <https://www.epa.gov/risk/risk->  
USEPA. 2017. Regional Screening Levels Generic Tables. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE D.4  
CALCULATION OF DA-EVENT FOR DERMAL EXPOSURE TO GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                            | Casrn    | EPC<br>(1) | Permeability<br>Coefficient | Ratio of<br>Permeability<br>Coefficients | Lag Time           | Time to Reach<br>Steady State | Fraction<br>Absorbed | Duration of Event<br>(t-event) |                   |                                | DA-event     |     |                |     |                             |     |
|------------|---------------------------------|----------|------------|-----------------------------|------------------------------------------|--------------------|-------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|--------------|-----|----------------|-----|-----------------------------|-----|
|            |                                 |          | Cw         | K <sub>p</sub>              | B                                        | T <sub>event</sub> | t*                            | FA                   | Worker                         | Resident<br>Adult | Resident<br>Child<br>(0-6 yrs) | Worker       |     | Resident Adult |     | Resident Child<br>(0-6 yrs) |     |
|            |                                 |          | ug/L       | cm/hr                       | unitless                                 | hr/event           | hr                            | unitless             | hr/event                       | hr/event          | hr/event                       | mg/cm2-event | Eqn | mg/cm2-event   | Eqn | mg/cm2-event                | Eqn |
| VOC        | 1,1,2,2-Tetrachloroethane       | 79-34-5  | 0.429      | 0.007                       | 0.035                                    | 0.92               | 2.20                          | 1                    | 1                              | 0.71              | 0.54                           | 7.9E-09      | 2   | 6.6E-09        | 2   | 5.8E-09                     | 2   |
| VOC        | Carbon tetrachloride            | 56-23-5  | 1.083      | 0.01630                     | 0.0778                                   | 0.76               | 1.83                          | 1                    | 1                              | 0.71              | 0.54                           | 4.3E-08      | 2   | 3.6E-08        | 2   | 3.1E-08                     | 2   |
| VOC        | Chloroform                      | 67-66-3  | 11         | 0.007                       | 0.029                                    | 0.49               | 1.18                          | 1                    | 1                              | 0.71              | 0.54                           | 1.5E-07      | 2   | 1.2E-07        | 2   | 1.1E-07                     | 2   |
| VOC        | cis-1,2-Dichloroethylene        | 156-59-2 | 20.02      | 0.011                       | 0.04                                     | 0.37               | 0.88                          | 1                    | 1                              | 0.71              | 0.54                           | 3.8E-07      | 3   | 3.1E-07        | 2   | 2.7E-07                     | 2   |
| VOC        | Methyl Ethyl Ketone (2-butanol) | 78-93-3  | 2910       | 0.0010                      | 0.003                                    | 0.27               | 0.64                          | 1                    | 1                              | 0.71              | 0.54                           | 4.3E-06      | 3   | 3.5E-06        | 3   | 2.9E-06                     | 2   |
| VOC        | Tetrachloroethylene             | 127-18-4 | 87.8       | 0.033                       | 0.17                                     | 0.89               | 2.14                          | 1                    | 1                              | 0.71              | 0.54                           | 7.7E-06      | 2   | 6.5E-06        | 2   | 5.6E-06                     | 2   |
| VOC        | Trichloroethylene               | 79-01-6  | 28.33      | 0.0116                      | 0.051                                    | 0.57               | 1.37                          | 1                    | 1                              | 0.71              | 0.54                           | 6.9E-07      | 2   | 5.8E-07        | 2   | 5.0E-07                     | 2   |
| VOC        | Vinyl chloride                  | 75-01-4  | 5.613      | 0.008                       | 0.03                                     | 0.24               | 0.57                          | 1                    | 1                              | 0.71              | 0.54                           | 6.9E-08      | 3   | 5.5E-08        | 3   | 4.6E-08                     | 2   |

|                                                               |                                                                                                                                                                |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equations:</b>                                             |                                                                                                                                                                |
| Inorganics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) = | DA <sub>event</sub> =                                                                                                                                          |
| (Eq 1)                                                        | K <sub>p</sub> x C <sub>w</sub> x t <sub>event</sub> x CF1 x CF2                                                                                               |
|                                                               | where CF1 = 0.001 mg/ug and CF2 = 0.001 L/cm <sup>3</sup>                                                                                                      |
| Organics: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =   | t <sub>event</sub> ≤ t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =                                                                                     |
| (Eq 2)                                                        | 2 x FA x K <sub>p</sub> x C <sub>w</sub> x (sqrt((6 x t <sub>event</sub> x t <sub>event</sub> ) / (π))) x CF1 x CF2                                            |
| (Eq 3)                                                        | t <sub>event</sub> > t*: DA <sub>event</sub> (mg/cm <sup>2</sup> -event) =                                                                                     |
|                                                               | FA x K <sub>p</sub> x C <sub>w</sub> x (t <sub>event</sub> / ((1+B) + 2 x t <sub>event</sub> x ((1 + 3B + 3B <sup>2</sup> )/(1+B) <sup>2</sup> ))) x CF1 x CF2 |

**Note:**  
(1) The EPC is the lower of the 95% upper confidence limit and maximum detected concentration. See Table 3s.  
The dermal parameters were taken from the chemical parameter table of the USEPA June 2017 RSL tables and RAGS Part E.

**Abbreviations:**  
CF1 -- Conversion Factor 1 (0.001 mg/ug)  
CF2 -- Conversion Factor 2 (0.001 L/cm<sup>3</sup>)  
C<sub>w</sub> -- Groundwater or surface water concentration  
VOC -- Volatile organic compound

**Reference:**  
USEPA. 2004. Risk Assessment Guidance for Superfund (RAGS) Volume I: Human Health Evaluation Manual. Part E Supplemental Guidance for Dermal Risk Assessment. Final. USEPA/540/R/99/005. July. Available online: <https://www.epa.gov/risk/risk->  
USEPA. 2017. Regional Screening Levels Generic Tables. June. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

TABLE D.5

BATHROOM AIR CONCENTRATIONS FROM EXPOSURE TO TAPWATER FOR A RESIDENT USING GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN     | EPC<br>(1) | Adult              |                   | Child (0-6 years)  |                   |
|------------|----------------------------------|-----------|------------|--------------------|-------------------|--------------------|-------------------|
|            |                                  |           | CW         | C <sub>a-max</sub> | C <sub>a</sub>    | C <sub>a-max</sub> | C <sub>a</sub>    |
|            |                                  |           | mg/L       | mg/m <sup>3</sup>  | mg/m <sup>3</sup> | mg/m <sup>3</sup>  | mg/m <sup>3</sup> |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | 0.0016     | 0.062              | 0.051             | 0.081              | 0.057             |
| VOC        | 1,1-Dichloroethene               | 75-35-4   | 0.00872    | 0.327              | 0.270             | 0.432              | 0.300             |
| VOC        | 1,2,3-Trichloropropane           | 96-18-4   | 0.072430   | 2.716              | 2.238             | 3.585              | 2.490             |
| VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | 0.06202    | 2.326              | 1.916             | 3.070              | 2.132             |
| VOC        | 1,2-Dichloroethane               | 107-06-2  | 0.0125     | 0.468              | 0.386             | 0.618              | 0.429             |
| VOC        | 1,2-Dichloropropane              | 78-87-5   | 0.02584    | 0.969              | 0.798             | 1.279              | 0.888             |
| VOC        | Acetone                          | 67-64-1   | 5.0220     | 188.325            | 155.169           | 248.589            | 172.631           |
| VOC        | Carbon tetrachloride             | 56-23-5   | 0.13770    | 5.164              | 4.255             | 6.816              | 4.733             |
| VOC        | Chloroform                       | 67-66-3   | 22.1000    | 828.750            | 682.843           | 1093.950           | 759.688           |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | 0.2339     | 8.771              | 7.227             | 11.578             | 8.040             |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | 14.18300   | 531.863            | 438.225           | 702.059            | 487.541           |
| VOC        | Methyl tert-butyl ether          | 1634-04-4 | 0.0600     | 2.251              | 1.854             | 2.971              | 2.063             |
| VOC        | Methylene chloride               | 75-09-2   | 0.09785    | 3.67               | 3.02              | 4.844              | 3.364             |
| VOC        | Tetrachloroethylene              | 127-18-4  | 0.2718     | 10.193             | 8.398             | 13.454             | 9.343             |
| VOC        | Toluene                          | 108-88-3  | 0.06498    | 2.437              | 2.008             | 3.217              | 2.234             |
| VOC        | Trichloroethylene                | 79-01-6   | 0.192      | 7.208              | 5.939             | 9.514              | 6.607             |
| VOC        | Vinyl chloride                   | 75-01-4   | 0.138      | 5.18               | 4.27              | 6.84               | 4.75              |

| Variables                                                     | Units             | Exposure Assumptions |
|---------------------------------------------------------------|-------------------|----------------------|
| C <sub>a</sub> = concentration of chemical in air             | mg/m <sup>3</sup> | Solved by Eq 1       |
| C <sub>a-max</sub> = maximum concentration of chemical in air | mg/m <sup>3</sup> | Solved by Eq 2       |
| t <sub>1</sub> = Adult time in shower                         | hr                | 0.25                 |
| t <sub>1</sub> = Child time in shower                         | hr                | 0.33                 |
| t <sub>2</sub> = Adult time in bathroom after shower          | hr                | 0.46                 |
| t <sub>2</sub> = Child time in bathroom after shower          | hr                | 0.21                 |
| f = fraction volatilized for chemical                         | unitless          | 0.9                  |
| F <sub>w</sub> = shower water flow rate                       | L/hr              | 1000                 |
| V <sub>a</sub> = bathroom volume                              | m <sup>3</sup>    | 6                    |

|             |                      |                                                                                                                        |
|-------------|----------------------|------------------------------------------------------------------------------------------------------------------------|
| Equation 1: | C <sub>a</sub> =     | ((C <sub>a-max</sub> /2) * t <sub>1</sub> + C <sub>a-max</sub> * t <sub>2</sub> ) / (t <sub>1</sub> + t <sub>2</sub> ) |
| Equation 2: | C <sub>a-max</sub> = | (C <sub>w</sub> * f * F <sub>w</sub> * t <sub>1</sub> ) / V <sub>a</sub>                                               |

**Note:**

(1) The EPC is the lower of the 95% UCL and maximum detected concentration - see Table 3s.

The most conservative value of the ranges for each exposure parameter, as presented in Schaum et al 1994, is applied for the calculations. The shower model air chemical concentrations are calculated for only VOCs.

Total exposure times for are 0.71 hr for an adult and 0.54 hr for a child (0-6 years). Professional judgement is used to split up the time spent in the shower versus in the bathroom after shower. An adult is assumed to spend approximately 15 minutes showering followed by 28 minutes in the bathroom, for a total of 43 minutes (0.71 hr). A child is assumed to spend approximately 20 minutes bathing followed by 13 minutes in the bathroom for a total of 32 minutes (0.54 hr).

**Abbreviation:**

CW -- Groundwater water concentration

EPC -- Exposure point concentration

VOC -- Volatile organic compound

**Reference:**

Wang, Rhoda G.M. et al. 1994. Water Consumption and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment. Wang. Macel Dekker, Inc., New York. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water, Schaum et al., Pages 307-320.

TABLE D.6

BATHROOM AIR CONCENTRATIONS FROM EXPOSURE TO TAPWATER FOR A RESIDENT USING GROUNDWATER - CORE OF THE PLUME -  
INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| COPC Group | COPC                             | CASRN    | EPC<br>(1) | Adult              |                   | Child (0-6 years)  |                   |
|------------|----------------------------------|----------|------------|--------------------|-------------------|--------------------|-------------------|
|            |                                  |          | CW         | C <sub>a-max</sub> | C <sub>a</sub>    | C <sub>a-max</sub> | C <sub>a</sub>    |
|            |                                  |          | mg/L       | mg/m <sup>3</sup>  | mg/m <sup>3</sup> | mg/m <sup>3</sup>  | mg/m <sup>3</sup> |
| VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5  | 0.0004     | 0.016              | 0.013             | 0.021              | 0.015             |
| VOC        | Carbon tetrachloride             | 56-23-5  | 0.00108    | 0.041              | 0.033             | 0.054              | 0.037             |
| VOC        | Chloroform                       | 67-66-3  | 0.0110     | 0.413              | 0.340             | 0.545              | 0.378             |
| VOC        | cis-1,2-Dichloroethylene         | 156-59-2 | 0.0200     | 0.751              | 0.619             | 0.991              | 0.688             |
| VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | 2.91000    | 109.125            | 89.913            | 144.045            | 100.031           |
| VOC        | Tetrachloroethylene              | 127-18-4 | 0.0878     | 3.293              | 2.713             | 4.346              | 3.018             |
| VOC        | Trichloroethylene                | 79-01-6  | 0.028      | 1.062              | 0.875             | 1.402              | 0.974             |
| VOC        | Vinyl chloride                   | 75-01-4  | 0.006      | 0.21               | 0.17              | 0.28               | 0.19              |

| Variables                                                     | Units             | Exposure Assumptions |
|---------------------------------------------------------------|-------------------|----------------------|
| C <sub>a</sub> = concentration of chemical in air             | mg/m <sup>3</sup> | Solved by Eq 1       |
| C <sub>a-max</sub> = maximum concentration of chemical in air | mg/m <sup>3</sup> | Solved by Eq 2       |
| t <sub>1</sub> = Adult time in shower                         | hr                | 0.25                 |
| t <sub>1</sub> = Child time in shower                         | hr                | 0.33                 |
| t <sub>2</sub> = Adult time in bathroom after shower          | hr                | 0.46                 |
| t <sub>2</sub> = Child time in bathroom after shower          | hr                | 0.21                 |
| f = fraction volatilized for chemical                         | unitless          | 0.9                  |
| F <sub>w</sub> = shower water flow rate                       | L/hr              | 1000                 |
| V <sub>a</sub> = bathroom volume                              | m <sup>3</sup>    | 6                    |

|             |                      |                                                         |
|-------------|----------------------|---------------------------------------------------------|
| Equation 1: | C <sub>a</sub> =     | $((C_{a-max}/2) * t_1 + C_{a-max} * t_2) / (t_1 + t_2)$ |
| Equation 2: | C <sub>a-max</sub> = | $(C_w * f * F_w * t_1) / V_a$                           |

**Note:**

(1) The EPC is the lower of the 95% UCL and maximum detected concentration - see Table 3s.

The most conservative value of the ranges for each exposure parameter, as presented in Schaum et al 1994, is applied for the calculations. The shower model air chemical concentrations are calculated for only VOCs.

Total exposure times for are 0.71 hr for an adult and 0.54 hr for a child (0-6 years). Professional judgement is used to split up the time spent in the shower versus in the bathroom after shower. An adult is assumed to spend approximately 15 minutes showering followed by 28 minutes in the bathroom, for a total of 43 minutes (0.71 hr). A child is assumed to spend approximately 20 minutes bathing followed by 13 minutes in the bathroom for a total of 32 minutes (0.54 hr).

**Abbreviation:**

CW -- Groundwater water concentration  
EPC -- Exposure point concentration  
VOC -- Volatile organic compound

**Reference:**

Wang, Rhoda G.M. et al. 1994. Water Consumption and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment. Wang. Macel Dekker, Inc., New York. Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water, Schaum et al., Pages 307-320.

TABLE D.7  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A WORKER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Worker  
Receptor Age: Adult

| Medium            | Exposure Medium                  | Exposure Point | Exposure Route | COPC Group      | COPC                             | CASRN     | EPC     |       | Cancer Risk Calculations  |           |         |               |             |                 | Non-Cancer Hazard Calculations |               |           |                 |           |         |           |         |
|-------------------|----------------------------------|----------------|----------------|-----------------|----------------------------------|-----------|---------|-------|---------------------------|-----------|---------|---------------|-------------|-----------------|--------------------------------|---------------|-----------|-----------------|-----------|---------|-----------|---------|
|                   |                                  |                |                |                 |                                  |           | Value   | Units | Exposure Intake           |           | CSF/IUR |               | Cancer Risk | Exposure Intake |                                | RfD/RfC       |           | Hazard Quotient |           |         |           |         |
|                   |                                  |                |                |                 |                                  |           |         |       | Value                     | Units     | Value   | Units         |             | Value           | Units                          | Value         | Units     |                 |           |         |           |         |
| Groundwater       | Groundwater                      | Groundwater    | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane        | 79-34-5   | 1.6E+00 | ug/L  | 6.3E-06                   | mg/kg-day | 2.0E-01 | (mg/kg-day)-1 | 1.3E-06     | 1.8E-05         | mg/kg-day                      | 2.0E-02       | mg/kg-day | 8.8E-04         |           |         |           |         |
|                   |                                  |                |                | VOC             | 1,1-Dichloroethene               | 75-35-4   | 8.7E+00 | ug/L  | 3.3E-05                   | mg/kg-day |         |               | 9.3E-05     | mg/kg-day       | 5.0E-02                        | mg/kg-day     | 1.9E-03   |                 |           |         |           |         |
|                   |                                  |                |                | VOC             | 1,2,3-Trichloropropane           | 96-18-4   | 7.2E+01 | ug/L  | 2.8E-04                   | mg/kg-day | 3.0E+01 | (mg/kg-day)-1 | 8.3E-03     | 7.8E-04         | mg/kg-day                      | 4.0E-03       | mg/kg-day | 1.9E-01         |           |         |           |         |
|                   |                                  |                |                | VOC             | 1,2,4-Trimethylbenzene           | 95-63-6   | 6.2E+01 | ug/L  | 2.4E-04                   | mg/kg-day |         |               | 6.6E-04     | mg/kg-day       | 1.0E-02                        | mg/kg-day     | 6.6E-02   |                 |           |         |           |         |
|                   |                                  |                |                | VOC             | 1,2-Dichloroethane               | 107-06-2  | 1.2E+01 | ug/L  | 4.8E-05                   | mg/kg-day | 9.1E-02 | (mg/kg-day)-1 | 4.3E-06     | 1.3E-04         | mg/kg-day                      | 6.0E-03       | mg/kg-day | 2.2E-02         |           |         |           |         |
|                   |                                  |                |                | VOC             | 1,2-Dichloropropane              | 78-87-5   | 2.6E+01 | ug/L  | 9.9E-05                   | mg/kg-day | 3.7E-02 | (mg/kg-day)-1 | 3.7E-06     | 2.8E-04         | mg/kg-day                      | 4.0E-02       | mg/kg-day | 6.9E-03         |           |         |           |         |
|                   |                                  |                |                | VOC             | Acetone                          | 67-64-1   | 5.0E+03 | ug/L  | 1.9E-02                   | mg/kg-day |         |               | 5.4E-02     | mg/kg-day       | 9.0E-01                        | mg/kg-day     | 6.0E-02   |                 |           |         |           |         |
|                   |                                  |                |                | VOC             | Carbon tetrachloride             | 56-23-5   | 1.4E+02 | ug/L  | 5.3E-04                   | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 3.7E-05     | 1.5E-03         | mg/kg-day                      | 4.0E-03       | mg/kg-day | 3.7E-01         |           |         |           |         |
|                   |                                  |                |                | VOC             | Chloroform                       | 67-66-3   | 2.2E+04 | ug/L  | 8.4E-02                   | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 2.6E-03     | 2.4E-01         | mg/kg-day                      | 1.0E-02       | mg/kg-day | 2.4E+01         |           |         |           |         |
|                   |                                  |                |                | VOC             | cis-1,2-Dichloroethylene         | 156-59-2  | 2.3E+02 | ug/L  | 8.9E-04                   | mg/kg-day |         |               | 2.5E-03     | 2.5E-03         | mg/kg-day                      | 2.0E-03       | mg/kg-day | 1.3E+00         |           |         |           |         |
|                   |                                  |                |                | VOC             | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | 1.4E+04 | ug/L  | 5.4E-02                   | mg/kg-day |         |               | 1.5E-01     | mg/kg-day       | 6.0E-01                        | mg/kg-day     | 2.5E-01   |                 |           |         |           |         |
|                   |                                  |                |                | VOC             | Methyl tert-butyl ether          | 1634-04-4 | 6.0E+01 | ug/L  | 2.3E-04                   | mg/kg-day | 1.8E-03 | (mg/kg-day)-1 | 4.1E-07     | 6.4E-04         | mg/kg-day                      |               |           |                 |           |         |           |         |
|                   |                                  |                |                | VOC             | Methylene chloride               | 75-09-2   | 9.8E+01 | ug/L  | 3.7E-04                   | mg/kg-day | 2.0E-03 | (mg/kg-day)-1 | 7.5E-07     | 1.0E-03         | mg/kg-day                      | 6.0E-03       | mg/kg-day | 1.7E-01         |           |         |           |         |
|                   |                                  |                |                | VOC             | Tetrachloroethylene              | 127-18-4  | 2.7E+02 | ug/L  | 1.0E-03                   | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 2.2E-06     | 2.9E-03         | mg/kg-day                      | 6.0E-03       | mg/kg-day | 4.8E-01         |           |         |           |         |
|                   |                                  |                |                | VOC             | Toluene                          | 108-88-3  | 6.5E+01 | ug/L  | 2.5E-04                   | mg/kg-day |         |               | 7.0E-04     | mg/kg-day       | 8.0E-02                        | mg/kg-day     | 8.7E-03   |                 |           |         |           |         |
|                   |                                  |                |                | VOC             | Trichloroethylene                | 79-01-6   | 1.9E+02 | ug/L  | 7.3E-04                   | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 3.4E-05     | 2.1E-03         | mg/kg-day                      | 5.0E-04       | mg/kg-day | 4.1E+00         |           |         |           |         |
|                   |                                  |                |                | VOC             | Vinyl chloride                   | 75-01-4   | 1.4E+02 | ug/L  | 5.3E-04                   | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 3.8E-04     | 1.5E-03         | mg/kg-day                      | 3.0E-03       | mg/kg-day | 4.9E-01         |           |         |           |         |
|                   |                                  |                |                | Ingestion Total |                                  |           |         |       |                           |           |         |               | 1.1E-02     |                 |                                |               |           |                 | 3.1E+01   |         |           |         |
|                   |                                  |                |                | Groundwater     | Groundwater                      | Tapwater  | Dermal  | VOC   | 1,1,2,2-Tetrachloroethane | 79-34-5   | 1.6E+00 | ug/L          | 3.3E-07     | mg/kg-day       | 2.0E-01                        | (mg/kg-day)-1 | 6.5E-08   | 9.1E-07         | mg/kg-day | 2.0E-02 | mg/kg-day | 4.6E-05 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | 1,1-Dichloroethene        | 75-35-4   | 8.7E+00 | ug/L          | 1.9E-06     | mg/kg-day       |                                |               | 4.1E-04   | 5.3E-06         | mg/kg-day | 5.0E-02 | mg/kg-day | 1.1E-04 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | 1,2,3-Trichloropropane    | 96-18-4   | 7.2E+01 | ug/L          | 1.4E-05     | mg/kg-day       | 3.0E+01                        | (mg/kg-day)-1 | 4.1E-04   | 3.8E-05         | mg/kg-day | 4.0E-03 | mg/kg-day | 9.5E-03 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | 1,2,4-Trimethylbenzene    | 95-63-6   | 6.2E+01 | ug/L          | 1.1E-04     | mg/kg-day       |                                |               | 3.1E-04   | 3.1E-04         | mg/kg-day | 1.0E-02 | mg/kg-day | 3.1E-02 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | 1,2-Dichloroethane        | 107-06-2  | 1.2E+01 | ug/L          | 9.9E-07     | mg/kg-day       | 9.1E-02                        | (mg/kg-day)-1 | 9.0E-08   | 2.8E-06         | mg/kg-day | 6.0E-03 | mg/kg-day | 4.6E-04 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | 1,2-Dichloropropane       | 78-87-5   | 2.6E+01 | ug/L          | 3.9E-06     | mg/kg-day       | 3.7E-02                        | (mg/kg-day)-1 | 1.4E-07   | 1.1E-05         | mg/kg-day | 4.0E-02 | mg/kg-day | 2.7E-04 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | Acetone                   | 67-64-1   | 5.0E+03 | ug/L          | 4.0E-05     | mg/kg-day       |                                |               | 1.1E-04   | 1.1E-04         | mg/kg-day | 9.0E-01 | mg/kg-day | 1.2E-04 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | Carbon tetrachloride      | 56-23-5   | 1.4E+02 | ug/L          | 5.8E-05     | mg/kg-day       | 7.0E-02                        | (mg/kg-day)-1 | 4.1E-06   | 1.6E-04         | mg/kg-day | 4.0E-03 | mg/kg-day | 4.1E-02 |
|                   |                                  |                |                |                 |                                  |           |         | VOC   | Chloroform                | 67-66-3   | 2.2E+04 | ug/L          | 3.2E-03     | mg/kg-day       | 3.1E-02                        | (mg/kg-day)-1 | 9.8E-05   | 8.8E-03         | mg/kg-day | 1.0E-02 | mg/kg-day | 8.8E-01 |
| VOC               | cis-1,2-Dichloroethylene         | 156-59-2       | 2.3E+02        |                 |                                  |           |         | ug/L  | 4.8E-05                   | mg/kg-day |         |               | 1.3E-04     | 1.3E-04         | mg/kg-day                      | 2.0E-03       | mg/kg-day | 6.7E-02         |           |         |           |         |
| VOC               | Methyl Ethyl Ketone (2-butanone) | 78-93-3        | 1.4E+04        |                 |                                  |           |         | ug/L  | 2.3E-04                   | mg/kg-day |         |               | 6.3E-04     | 6.3E-04         | mg/kg-day                      | 6.0E-01       | mg/kg-day | 1.1E-03         |           |         |           |         |
| VOC               | Methyl tert-butyl ether          | 1634-04-4      | 6.0E+01        |                 |                                  |           |         | ug/L  | 2.3E-06                   | mg/kg-day | 1.8E-03 | (mg/kg-day)-1 | 4.1E-09     | 6.3E-06         | mg/kg-day                      |               |           |                 |           |         |           |         |
| VOC               | Methylene chloride               | 75-09-2        | 9.8E+01        |                 |                                  |           |         | ug/L  | 6.1E-06                   | mg/kg-day | 2.0E-03 | (mg/kg-day)-1 | 1.2E-08     | 1.7E-05         | mg/kg-day                      | 6.0E-03       | mg/kg-day | 2.8E-03         |           |         |           |         |
| VOC               | Tetrachloroethylene              | 127-18-4       | 2.7E+02        |                 |                                  |           |         | ug/L  | 2.6E-04                   | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 5.4E-07     | 7.2E-04         | mg/kg-day                      | 6.0E-03       | mg/kg-day | 1.2E-01         |           |         |           |         |
| VOC               | Toluene                          | 108-88-3       | 6.5E+01        |                 |                                  |           |         | ug/L  | 3.6E-05                   | mg/kg-day |         |               | 1.0E-04     | 1.0E-04         | mg/kg-day                      | 8.0E-02       | mg/kg-day | 1.3E-03         |           |         |           |         |
| VOC               | Trichloroethylene                | 79-01-6        | 1.9E+02        |                 |                                  |           |         | ug/L  | 5.0E-05                   | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 2.3E-06     | 1.4E-04         | mg/kg-day                      | 5.0E-04       | mg/kg-day | 2.8E-01         |           |         |           |         |
| VOC               | Vinyl chloride                   | 75-01-4        | 1.4E+02        |                 |                                  |           |         | ug/L  | 1.8E-05                   | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 1.3E-05     | 5.1E-05         | mg/kg-day                      | 3.0E-03       | mg/kg-day | 1.7E-02         |           |         |           |         |
| Dermal Total      |                                  |                |                |                 |                                  |           |         |       | 5.3E-04                   |           |         |               |             |                 | 1.5E+00                        |               |           |                 |           |         |           |         |
| Groundwater Total |                                  |                |                |                 |                                  |           |         |       |                           |           |         | 1.2E-02       |             |                 |                                | 3.3E+01       |           |                 |           |         |           |         |
| Receptor Total    |                                  |                |                |                 |                                  |           |         |       |                           |           |         | 1.2E-02       |             |                 |                                | 3.3E+01       |           |                 |           |         |           |         |

#### Notes:

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.

The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.

The single-chemical cancer risks incorporate the one hit equations for cancer risks > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF).

RAGS Part E does not provide dermal soil absorption fraction values (ABSd) for most VOCs; therefore a dermally absorbed dose is not calculated.

The DAvent values for dermal exposure to groundwater are calculated in Table 4.Supp.3A to D.

#### Abbreviations:

COPC -- Constituent of potential concern

CSF -- Oral cancer slope factor

EPC -- Exposure point concentration

IUR -- Inhalation unit risk

RIC -- Inhalation reference concentration

RfD -- Oral reference dose

TABLE D.8  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium      | Exposure Medium | Exposure Point           | Exposure Route  | COPC Group | COPC                             | CASRN     | Mutagenic | EPC     |         |       | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |                   |           |         |           |                 |
|-------------|-----------------|--------------------------|-----------------|------------|----------------------------------|-----------|-----------|---------|---------|-------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|
|             |                 |                          |                 |            |                                  |           |           | Adult   | Child   | Units | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |           |         |           |                 | Child (0-6 years) |           |         |           |                 |
|             |                 |                          |                 |            |                                  |           |           |         |         |       | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |
|             |                 |                          |                 |            |                                  |           |           |         |         |       | Value                        | Units     | Value         | Units         |             | Value                          | Units     | Value   | Units     |                 | Value             | Units     | Value   | Units     |                 |
| Groundwater | Groundwater     | Tapwater                 | Ingestion       | VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | N         | 1.6E+00 | 1.6E+00 | ug/L  | 2.5E-05                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 5.1E-06     | 4.9E-05                        | mg/kg-day | 2.0E-02 | mg/kg-day | 2.5E-03         | 8.2E-05           | mg/kg-day | 2.0E-02 | mg/kg-day | 4.1E-03         |
|             |                 |                          |                 | VOC        | 1,1-Dichloroethene               | 75-35-4   | N         | 8.7E+00 | 8.7E+00 | ug/L  | 1.3E-04                      | mg/kg-day |               |               |             | 2.6E-04                        | mg/kg-day | 5.0E-02 | mg/kg-day | 5.2E-03         | 4.4E-04           | mg/kg-day | 5.0E-02 | mg/kg-day | 8.7E-03         |
|             |                 |                          |                 | VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Y         | 7.2E+01 | 7.2E+01 | ug/L  | 4.1E-03                      | mg/kg-day | 3.0E+01       | (mg/kg-day)-1 | 1.2E-01     | 2.2E-03                        | mg/kg-day | 4.0E-03 | mg/kg-day | 5.4E-01         | 3.6E-03           | mg/kg-day | 4.0E-03 | mg/kg-day | 9.0E-01         |
|             |                 |                          |                 | VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | N         | 6.2E+01 | 6.2E+01 | ug/L  | 9.6E-04                      | mg/kg-day |               |               |             | 1.9E-03                        | mg/kg-day | 1.0E-02 | mg/kg-day | 1.9E-01         | 3.1E-03           | mg/kg-day | 1.0E-02 | mg/kg-day | 3.1E-01         |
|             |                 |                          |                 | VOC        | 1,2-Dichloroethane               | 107-06-2  | N         | 1.2E+01 | 1.2E+01 | ug/L  | 1.9E-04                      | mg/kg-day | 9.1E-02       | (mg/kg-day)-1 | 1.8E-05     | 3.7E-04                        | mg/kg-day | 6.0E-03 | mg/kg-day | 6.2E-02         | 6.2E-04           | mg/kg-day | 6.0E-03 | mg/kg-day | 1.0E-01         |
|             |                 |                          |                 | VOC        | 1,2-Dichloropropane              | 78-87-5   | N         | 2.6E+01 | 2.6E+01 | ug/L  | 4.0E-04                      | mg/kg-day | 3.7E-02       | (mg/kg-day)-1 | 1.5E-05     | 7.7E-04                        | mg/kg-day | 4.0E-02 | mg/kg-day | 1.9E-02         | 1.3E-03           | mg/kg-day | 4.0E-02 | mg/kg-day | 3.2E-02         |
|             |                 |                          |                 | VOC        | Acetone                          | 67-64-1   | N         | 5.0E+03 | 5.0E+03 | ug/L  | 7.7E-02                      | mg/kg-day |               |               |             | 1.5E-01                        | mg/kg-day | 9.0E-01 | mg/kg-day | 1.7E-01         | 2.5E-01           | mg/kg-day | 9.0E-01 | mg/kg-day | 2.8E-01         |
|             |                 |                          |                 | VOC        | Carbon tetrachloride             | 56-23-5   | N         | 1.4E+02 | 1.4E+02 | ug/L  | 2.1E-03                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 1.5E-04     | 4.1E-03                        | mg/kg-day | 4.0E-03 | mg/kg-day | 1.0E+00         | 6.9E-03           | mg/kg-day | 4.0E-03 | mg/kg-day | 1.7E+00         |
|             |                 |                          |                 | VOC        | Chloroform                       | 67-66-3   | N         | 2.2E+04 | 2.2E+04 | ug/L  | 3.4E-01                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 1.1E-02     | 6.6E-01                        | mg/kg-day | 1.0E-02 | mg/kg-day | 6.6E+01         | 1.1E+00           | mg/kg-day | 1.0E-02 | mg/kg-day | 1.1E+02         |
|             |                 |                          |                 | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | N         | 2.3E+02 | 2.3E+02 | ug/L  | 3.6E-03                      | mg/kg-day |               |               |             | 7.0E-03                        | mg/kg-day | 2.0E-03 | mg/kg-day | 3.5E+00         | 1.2E-02           | mg/kg-day | 2.0E-03 | mg/kg-day | 5.8E+00         |
|             |                 |                          |                 | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | N         | 1.4E+04 | 1.4E+04 | ug/L  | 2.2E-01                      | mg/kg-day |               |               |             | 4.3E-01                        | mg/kg-day | 6.0E-01 | mg/kg-day | 7.1E-01         | 7.1E-01           | mg/kg-day | 6.0E-01 | mg/kg-day | 1.2E+00         |
|             |                 |                          |                 | VOC        | Methyl tert-butyl ether          | 1634-04-4 | N         | 6.0E+01 | 6.0E+01 | ug/L  | 9.3E-04                      | mg/kg-day | 1.8E-03       | (mg/kg-day)-1 | 1.7E-06     | 1.8E-03                        | mg/kg-day |         |           | 3.0E-03         | 3.0E-03           | mg/kg-day |         |           |                 |
|             |                 |                          |                 | VOC        | Methylene chloride               | 75-09-2   | Y         | 9.8E+01 | 9.8E+01 | ug/L  | 5.6E-03                      | mg/kg-day | 2.0E-03       | (mg/kg-day)-1 | 1.1E-05     | 2.9E-03                        | mg/kg-day | 6.0E-03 | mg/kg-day | 4.9E-01         | 4.9E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 8.1E-01         |
|             |                 |                          |                 | VOC        | Tetrachloroethylene              | 127-18-4  | N         | 2.7E+02 | 2.7E+02 | ug/L  | 4.2E-03                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 8.8E-06     | 8.1E-03                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.4E+00         | 1.4E-02           | mg/kg-day | 6.0E-03 | mg/kg-day | 2.3E+00         |
|             |                 |                          |                 | VOC        | Toluene                          | 108-88-3  | N         | 6.5E+01 | 6.5E+01 | ug/L  | 1.0E-03                      | mg/kg-day |               |               |             | 1.9E-03                        | mg/kg-day | 8.0E-02 | mg/kg-day | 2.4E-02         | 3.2E-03           | mg/kg-day | 8.0E-02 | mg/kg-day | 4.1E-02         |
|             |                 |                          |                 | VOC        | Trichloroethylene                | 79-01-6   | Y         | 1.9E+02 | 1.9E+02 | ug/L  | 4.6E-03                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 2.1E-04     | 5.8E-03                        | mg/kg-day | 5.0E-04 | mg/kg-day | 1.2E+01         | 9.6E-03           | mg/kg-day | 5.0E-04 | mg/kg-day | 1.9E+01         |
|             |                 |                          |                 | VOC        | Vinyl chloride                   | 75-01-4   | Y         | 1.4E+02 | 1.4E+02 | ug/L  | 9.3E-03                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 6.7E-03     | 4.1E-03                        | mg/kg-day | 3.0E-03 | mg/kg-day | 1.4E+00         | 6.9E-03           | mg/kg-day | 3.0E-03 | mg/kg-day | 2.3E+00         |
|             |                 |                          | Ingestion Total |            |                                  |           |           |         |         |       |                              |           |               |               | 1.3E-01     |                                |           |         |           |                 |                   |           |         |           |                 |
| Groundwater | Groundwater     | Tapwater                 | Dermal          | VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | N         | 1.6E+00 | 1.6E+00 | ug/L  | 2.7E-06                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 5.5E-07     | 6.0E-06                        | mg/kg-day | 2.0E-02 | mg/kg-day | 3.0E-04         | 9.0E-06           | mg/kg-day | 2.0E-02 | mg/kg-day | 4.5E-04         |
|             |                 |                          |                 | VOC        | 1,1-Dichloroethene               | 75-35-4   | N         | 8.7E+00 | 8.7E+00 | ug/L  | 1.5E-05                      | mg/kg-day |               |               |             | 3.4E-05                        | mg/kg-day | 5.0E-02 | mg/kg-day | 6.8E-04         | 5.1E-05           | mg/kg-day | 5.0E-02 | mg/kg-day | 1.0E-03         |
|             |                 |                          |                 | VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Y         | 7.2E+01 | 7.2E+01 | ug/L  | 3.6E-04                      | mg/kg-day | 3.0E+01       | (mg/kg-day)-1 | 1.1E-02     | 2.5E-04                        | mg/kg-day | 4.0E-03 | mg/kg-day | 6.3E-02         | 3.8E-04           | mg/kg-day | 4.0E-03 | mg/kg-day | 9.4E-02         |
|             |                 |                          |                 | VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | N         | 6.2E+01 | 6.2E+01 | ug/L  | 9.3E-04                      | mg/kg-day |               |               |             | 2.1E-03                        | mg/kg-day | 1.0E-02 | mg/kg-day | 2.1E-01         | 3.1E-03           | mg/kg-day | 1.0E-02 | mg/kg-day | 3.1E-01         |
|             |                 |                          |                 | VOC        | 1,2-Dichloroethane               | 107-06-2  | N         | 1.2E+01 | 1.2E+01 | ug/L  | 8.0E-06                      | mg/kg-day | 9.1E-02       | (mg/kg-day)-1 | 7.3E-07     | 1.8E-05                        | mg/kg-day | 6.0E-03 | mg/kg-day | 2.9E-03         | 2.7E-05           | mg/kg-day | 6.0E-03 | mg/kg-day | 4.4E-03         |
|             |                 |                          |                 | VOC        | 1,2-Dichloropropane              | 78-87-5   | N         | 2.6E+01 | 2.6E+01 | ug/L  | 3.3E-05                      | mg/kg-day | 3.7E-02       | (mg/kg-day)-1 | 1.2E-06     | 7.2E-05                        | mg/kg-day | 4.0E-02 | mg/kg-day | 1.8E-03         | 1.1E-04           | mg/kg-day | 4.0E-02 | mg/kg-day | 2.7E-03         |
|             |                 |                          |                 | VOC        | Acetone                          | 67-64-1   | N         | 5.0E+03 | 5.0E+03 | ug/L  | 3.2E-04                      | mg/kg-day |               |               |             | 7.0E-04                        | mg/kg-day | 9.0E-01 | mg/kg-day | 7.8E-04         | 1.0E-03           | mg/kg-day | 9.0E-01 | mg/kg-day | 1.1E-03         |
|             |                 |                          |                 | VOC        | Carbon tetrachloride             | 56-23-5   | N         | 1.4E+02 | 1.4E+02 | ug/L  | 4.9E-04                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 3.4E-05     | 1.1E-03                        | mg/kg-day | 4.0E-03 | mg/kg-day | 2.7E-01         | 1.6E-03           | mg/kg-day | 4.0E-03 | mg/kg-day | 4.1E-01         |
|             |                 |                          |                 | VOC        | Chloroform                       | 67-66-3   | N         | 2.2E+04 | 2.2E+04 | ug/L  | 2.6E-02                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 8.2E-04     | 5.8E-02                        | mg/kg-day | 1.0E-02 | mg/kg-day | 5.8E+00         | 8.7E-02           | mg/kg-day | 1.0E-02 | mg/kg-day | 8.7E+00         |
|             |                 |                          |                 | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | N         | 2.3E+02 | 2.3E+02 | ug/L  | 3.9E-04                      | mg/kg-day |               |               |             | 8.6E-04                        | mg/kg-day | 2.0E-03 | mg/kg-day | 4.3E-01         | 1.3E-03           | mg/kg-day | 2.0E-03 | mg/kg-day | 6.4E-01         |
|             |                 |                          |                 | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | N         | 1.4E+04 | 1.4E+04 | ug/L  | 1.8E-03                      | mg/kg-day |               |               |             | 4.0E-03                        | mg/kg-day | 6.0E-01 | mg/kg-day | 6.7E-03         | 5.8E-03           | mg/kg-day | 6.0E-01 | mg/kg-day | 9.7E-03         |
|             |                 |                          |                 | VOC        | Methyl tert-butyl ether          | 1634-04-4 | N         | 6.0E+01 | 6.0E+01 | ug/L  | 1.8E-05                      | mg/kg-day | 1.8E-03       | (mg/kg-day)-1 | 3.3E-08     | 4.0E-05                        | mg/kg-day |         |           | 6.0E-05         | 6.0E-05           | mg/kg-day |         |           |                 |
|             |                 |                          |                 | VOC        | Methylene chloride               | 75-09-2   | Y         | 9.8E+01 | 9.8E+01 | ug/L  | 1.5E-04                      | mg/kg-day | 2.0E-03       | (mg/kg-day)-1 | 3.1E-07     | 1.1E-04                        | mg/kg-day | 6.0E-03 | mg/kg-day | 1.8E-02         | 1.6E-04           | mg/kg-day | 6.0E-03 | mg/kg-day | 2.7E-02         |
|             |                 |                          |                 | VOC        | Tetrachloroethylene              | 127-18-4  | N         | 2.7E+02 | 2.7E+02 | ug/L  | 2.1E-03                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 4.5E-06     | 4.7E-03                        | mg/kg-day | 6.0E-03 | mg/kg-day | 7.8E-01         | 7.1E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 1.2E+00         |
|             |                 |                          |                 | VOC        | Toluene                          | 108-88-3  | N         | 6.5E+01 | 6.5E+01 | ug/L  | 3.0E-04                      | mg/kg-day |               |               |             | 6.5E-04                        | mg/kg-day | 8.0E-02 | mg/kg-day | 8.1E-03         | 9.8E-04           | mg/kg-day | 8.0E-02 | mg/kg-day | 1.2E-02         |
|             |                 |                          |                 | VOC        | Trichloroethylene                | 79-01-6   | Y         | 1.9E+02 | 1.9E+02 | ug/L  | 6.1E-04                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 2.8E-05     | 9.3E-04                        | mg/kg-day | 5.0E-04 | mg/kg-day | 1.9E+00         | 1.4E-03           | mg/kg-day | 5.0E-04 | mg/kg-day | 2.8E+00         |
|             |                 |                          |                 | VOC        | Vinyl chloride                   | 75-01-4   | Y         | 1.4E+02 | 1.4E+02 | ug/L  | 6.3E-04                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 4.5E-04     | 3.2E-04                        | mg/kg-day | 3.0E-03 | mg/kg-day | 1.1E-01         | 4.6E-04           | mg/kg-day | 3.0E-03 | mg/kg-day | 1.5E-01         |
|             |                 |                          | Dermal Total    |            |                                  |           |           |         |         |       |                              |           |               |               | 1.2E-02     |                                |           |         |           |                 |                   |           |         |           |                 |
| Groundwater | Groundwater     | Water Vapors in Bathroom | Inhalation      | VOC        | 1,1,2,2-Tetrachloroethane        | 79-34-5   | N         | 5.1E-02 | 5.7E-02 | mg/m3 | 5.2E-04                      | mg/m3     | 5.8E-02       | (mg/m3)-1     | 3.0E-05     | 1.4E-03                        | mg/m3     |         |           |                 | 1.2E-03           | mg/m3     |         |           |                 |
|             |                 |                          |                 | VOC        | 1,1-Dichloroethene               | 75-35-4   | N         | 2.7E+01 | 3.0E+01 | mg/m3 | 2.7E-03                      | mg/m3     |               |               |             | 7.6E-03                        | mg/m3     |         |           |                 | 6.5E-03           | mg/m3     |         |           |                 |
|             |                 |                          |                 | VOC        | 1,2,3-Trichloropropane           | 96-18-4   | Y         | 2.2E+00 | 2.5E+00 | mg/m3 | 1.2E-01                      | mg/m3     |               |               |             | 6.3E-02                        | mg/m3     | 3.0E-04 | mg/m3     | 2.1E+02         | 5.4E-02           | mg/m3     | 3.0E-04 | mg/m3     | 1.8E+02         |
|             |                 |                          |                 | VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | N         | 1.9E+00 | 2.1E+00 | mg/m3 | 1.9E-02                      | mg/m3     |               |               |             | 5.4E-02                        | mg/m3     | 6.0E-02 | mg/m3     | 9.1E-01         | 4.6E-02           | mg/m3     | 6.0E-02 | mg/m3     | 7.7E-01         |
|             |                 |                          |                 | VOC        | 1,2-Dichloroethane               | 107-06-2  | N         | 3.9E-01 | 4.3E-01 | mg/m3 | 3.9E-03                      | mg/m3     | 2.6E-02       | (mg/m3)-1     | 1.0E-04     | 1.1E-02                        | mg/m3     | 7.0E-03 | mg/m3     | 1.6E+00         | 9.3E-03           | mg/m3     | 7.0E-03 | mg/m3     | 1.3E+00         |
|             |                 |                          |                 | VOC        | 1,2-Dichloropropane              | 78-87-5   | N         | 8.0E-01 | 8.9E-01 | mg/m3 | 8.1E-03                      | mg/m3     | 3.7E-02       | (mg/m3)-1     | 3.0E-04     | 2.3E-02                        | mg/m3     | 4.0E-03 | mg/m3     | 5.7E+00         | 1.9E-02           | mg/m3     | 4.0E-03 | mg/m3     | 4.8E+00         |
|             |                 |                          |                 | VOC        | Acetone                          | 67-64-1   | N         | 1.6E+02 | 1.7E+02 | mg/m3 | 1.6E+00                      | mg/m3     |               |               |             | 4.4E+00                        | mg/m3     | 3.1E+01 | mg/m3     | 1.4E-01         | 3.7E+00           | mg/m3     | 3.1E+01 | mg/m3     | 1.2E-01         |
|             |                 |                          |                 | VOC        | Carbon tetrachloride             | 56-23-5   | N         | 4.3E+00 | 4.7E+00 | mg/m3 | 4.3E-02                      | mg/m3     | 6.0E-03       | (mg/m3)-1     | 2.6E-04     | 1.2E-01                        | mg/m3     | 1.0E-01 | mg/m3     | 1.2E+00         | 1.0E-01           | mg/m3     | 1.0E-01 | mg/m3     |                 |

TABLE D.9  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A WORKER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Worker  
Receptor Age: Adult

| Medium            | Exposure Medium                  | Exposure Point | Exposure Route | COPC Group      | COPC                             | CASRN    | EPC     |                           | Cancer Risk Calculations |           |         |               |             |                 | Non-Cancer Hazard Calculations |         |           |                 |         |           |
|-------------------|----------------------------------|----------------|----------------|-----------------|----------------------------------|----------|---------|---------------------------|--------------------------|-----------|---------|---------------|-------------|-----------------|--------------------------------|---------|-----------|-----------------|---------|-----------|
|                   |                                  |                |                |                 |                                  |          | Value   | Units                     | Exposure Intake          |           | CSF/IUR |               | Cancer Risk | Exposure Intake |                                | RfD/RfC |           | Hazard Quotient |         |           |
|                   |                                  |                |                |                 |                                  |          |         |                           | Value                    | Units     | Value   | Units         |             | Value           | Units                          | Value   | Units     |                 |         |           |
| Groundwater       | Groundwater                      | Groundwater    | Ingestion      | VOC             | 1,1,2,2-Tetrachloroethane        | 79-34-5  | 4.3E-01 | ug/L                      | 1.6E-06                  | mg/kg-day | 2.0E-01 | (mg/kg-day)-1 | 3.3E-07     | 4.6E-06         | mg/kg-day                      | 2.0E-02 | mg/kg-day | 2.3E-04         |         |           |
|                   |                                  |                |                | VOC             | Carbon tetrachloride             | 56-23-5  | 1.1E+00 | ug/L                      | 4.1E-06                  | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 2.9E-07     | 1.2E-05         | mg/kg-day                      | 4.0E-03 | mg/kg-day | 2.9E-03         |         |           |
|                   |                                  |                |                | VOC             | Chloroform                       | 67-66-3  | 1.1E+01 | ug/L                      | 4.2E-05                  | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 1.3E-06     | 1.2E-04         | mg/kg-day                      | 1.0E-02 | mg/kg-day | 1.2E-02         |         |           |
|                   |                                  |                |                | VOC             | cis-1,2-Dichloroethylene         | 156-59-2 | 2.0E+01 | ug/L                      | 7.7E-05                  | mg/kg-day |         |               |             | 2.1E-04         | mg/kg-day                      | 2.0E-03 | mg/kg-day | 1.1E-01         |         |           |
|                   |                                  |                |                | VOC             | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | 2.9E+03 | ug/L                      | 1.1E-02                  | mg/kg-day |         |               |             | 3.1E-02         | mg/kg-day                      | 6.0E-01 | mg/kg-day | 5.2E-02         |         |           |
|                   |                                  |                |                | VOC             | Tetrachloroethylene              | 127-18-4 | 8.8E+01 | ug/L                      | 3.4E-04                  | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 7.0E-07     | 9.4E-04         | mg/kg-day                      | 6.0E-03 | mg/kg-day | 1.6E-01         |         |           |
|                   |                                  |                |                | VOC             | Trichloroethylene                | 79-01-6  | 2.8E+01 | ug/L                      | 1.1E-04                  | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 5.0E-06     | 3.0E-04         | mg/kg-day                      | 5.0E-04 | mg/kg-day | 6.1E-01         |         |           |
|                   |                                  |                |                | VOC             | Vinyl chloride                   | 75-01-4  | 5.6E+00 | ug/L                      | 2.1E-05                  | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 1.5E-05     | 6.0E-05         | mg/kg-day                      | 3.0E-03 | mg/kg-day | 2.0E-02         |         |           |
|                   |                                  |                |                | Ingestion Total |                                  |          |         |                           |                          |           |         |               |             | 2.3E-05         |                                |         |           |                 |         | 9.6E-01   |
|                   |                                  |                | Groundwater    | Groundwater     | Tapwater                         | Dermal   | VOC     | 1,1,2,2-Tetrachloroethane | 79-34-5                  | 4.3E-01   | ug/L    | 8.5E-08       | mg/kg-day   | 2.0E-01         | (mg/kg-day)-1                  | 1.7E-08 | 2.4E-07   | mg/kg-day       | 2.0E-02 | mg/kg-day |
| VOC               | Carbon tetrachloride             | 56-23-5        |                |                 |                                  |          | 1.1E+00 | ug/L                      | 4.6E-07                  | mg/kg-day | 7.0E-02 | (mg/kg-day)-1 | 3.2E-08     | 1.3E-06         | mg/kg-day                      | 4.0E-03 | mg/kg-day | 3.2E-04         |         |           |
| VOC               | Chloroform                       | 67-66-3        |                |                 |                                  |          | 1.1E+01 | ug/L                      | 1.6E-06                  | mg/kg-day | 3.1E-02 | (mg/kg-day)-1 | 4.9E-08     | 4.4E-06         | mg/kg-day                      | 1.0E-02 | mg/kg-day | 4.4E-04         |         |           |
| VOC               | cis-1,2-Dichloroethylene         | 156-59-2       |                |                 |                                  |          | 2.0E+01 | ug/L                      | 4.1E-06                  | mg/kg-day |         |               |             | 1.1E-05         | mg/kg-day                      | 2.0E-03 | mg/kg-day | 5.7E-03         |         |           |
| VOC               | Methyl Ethyl Ketone (2-butanone) | 78-93-3        |                |                 |                                  |          | 2.9E+03 | ug/L                      | 4.6E-05                  | mg/kg-day |         |               |             | 1.3E-04         | mg/kg-day                      | 6.0E-01 | mg/kg-day | 2.2E-04         |         |           |
| VOC               | Tetrachloroethylene              | 127-18-4       |                |                 |                                  |          | 8.8E+01 | ug/L                      | 8.3E-05                  | mg/kg-day | 2.1E-03 | (mg/kg-day)-1 | 1.7E-07     | 2.3E-04         | mg/kg-day                      | 6.0E-03 | mg/kg-day | 3.9E-02         |         |           |
| VOC               | Trichloroethylene                | 79-01-6        |                |                 |                                  |          | 2.8E+01 | ug/L                      | 7.4E-06                  | mg/kg-day | 4.6E-02 | (mg/kg-day)-1 | 3.4E-07     | 2.1E-05         | mg/kg-day                      | 5.0E-04 | mg/kg-day | 4.1E-02         |         |           |
| VOC               | Vinyl chloride                   | 75-01-4        |                |                 |                                  |          | 5.6E+00 | ug/L                      | 7.4E-07                  | mg/kg-day | 7.2E-01 | (mg/kg-day)-1 | 5.3E-07     | 2.1E-06         | mg/kg-day                      | 3.0E-03 | mg/kg-day | 6.9E-04         |         |           |
| Dermal Total      |                                  |                |                |                 |                                  |          |         |                           |                          | 1.1E-06   |         |               |             |                 |                                | 8.7E-02 |           |                 |         |           |
| Groundwater Total |                                  |                |                |                 |                                  |          |         |                           |                          |           |         | 2.4E-05       |             |                 |                                |         |           | 1.0E+00         |         |           |
| Receptor Total    |                                  |                |                |                 |                                  |          |         |                           |                          |           |         | 2.4E-05       |             |                 |                                |         |           | 1.0E+00         |         |           |

**Notes:**

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.

The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.

The single-chemical cancer risks incorporate the one hit equations for cancer risks  $> 0.01$ , per RAGS Part A Chapter 8. Risk =  $1 - \exp(-\text{Dose} \times \text{SF})$ .

RAGS Part E does not provide dermal soil absorption fraction values (ABSd) for most VOCs; therefore a dermally absorbed dose is not calculated.

The DAvent values for dermal exposure to groundwater are calculated in Table 4.Supp.3A to D.

**Abbreviations:**

COPC -- Constituent of potential concern

CSF -- Oral cancer slope factor

EPC -- Exposure point concentration

IUR -- Inhalation unit risk

RfC -- Inhalation reference concentration

RfD -- Oral reference dose

TABLE D.10  
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR A RESIDENT - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Scenario Timeframe: Future  
Receptor Population: Resident  
Receptor Age: Adult and Child (0-6 yrs)

| Medium            | Exposure Medium | Exposure Point           | Exposure Route | COPC Group                   | COPC                             | CASRN    | Mutagenic | EPC     |         |       | Cancer Risk Calculations     |           |               |               |             | Non-Cancer Hazard Calculations |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------|-----------------|--------------------------|----------------|------------------------------|----------------------------------|----------|-----------|---------|---------|-------|------------------------------|-----------|---------------|---------------|-------------|--------------------------------|-----------|---------|-----------|-----------------|-------------------|-----------|---------|-----------|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                   |                 |                          |                |                              |                                  |          |           | Adult   | Child   | Units | Adult and Child Age-Adjusted |           |               |               |             | Adult                          |           |         |           |                 | Child (0-6 years) |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       | Exposure Intake              |           | CSF/Unit Risk |               | Cancer Risk | Exposure Intake                |           | RfD/RfC |           | Hazard Quotient | Exposure Intake   |           | RfD/RfC |           | Hazard Quotient |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       | Value                        | Units     | Value         | Units         |             | Value                          | Units     | Value   | Units     |                 | Value             | Units     | Value   | Units     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Groundwater       | Groundwater     | Tapwater                 | Ingestion      | VOC                          | 1,1,2,2-Tetrachloroethane        | 79-34-5  | N         | 4.3E-01 | 4.3E-01 | ug/L  | 6.6E-06                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 1.3E-06     | 1.3E-05                        | mg/kg-day | 2.0E-02 | mg/kg-day | 6.4E-04         | 2.1E-05           | mg/kg-day | 2.0E-02 | mg/kg-day | 1.1E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Carbon tetrachloride             | 56-23-5  | N         | 1.1E+00 | 1.1E+00 | ug/L  | 1.7E-05                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 1.2E-06     | 3.2E-05                        | mg/kg-day | 4.0E-03 | mg/kg-day | 8.1E-03         | 5.4E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 1.4E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Chloroform                       | 67-66-3  | N         | 1.1E+01 | 1.1E+01 | ug/L  | 1.7E-04                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 5.3E-06     | 3.3E-04                        | mg/kg-day | 1.0E-02 | mg/kg-day | 3.3E-02         | 5.5E-04           | mg/kg-day | 1.0E-02 | mg/kg-day | 5.5E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | cis-1,2-Dichloroethylene         | 156-59-2 | N         | 2.0E+01 | 2.0E+01 | ug/L  | 3.1E-04                      | mg/kg-day |               |               |             | 6.0E-04                        | mg/kg-day | 2.0E-03 | mg/kg-day | 3.0E-01         | 1.0E-03           | mg/kg-day | 2.0E-03 | mg/kg-day | 5.0E-01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | N         | 2.9E+03 | 2.9E+03 | ug/L  | 4.5E-02                      | mg/kg-day |               |               |             | 8.7E-02                        | mg/kg-day | 6.0E-01 | mg/kg-day | 1.5E-01         | 1.5E-01           | mg/kg-day | 6.0E-01 | mg/kg-day | 2.4E-01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Tetrachloroethylene              | 127-18-4 | N         | 8.8E+01 | 8.8E+01 | ug/L  | 1.4E-03                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 2.8E-06     | 2.6E-03                        | mg/kg-day | 6.0E-03 | mg/kg-day | 4.4E-01         | 4.4E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 7.3E-01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Trichloroethylene                | 79-01-6  | Y         | 2.8E+01 | 2.8E+01 | ug/L  | 6.8E-04                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 3.1E-05     | 8.5E-04                        | mg/kg-day | 5.0E-04 | mg/kg-day | 1.7E+00         | 1.4E-03           | mg/kg-day | 5.0E-04 | mg/kg-day | 2.8E+00         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Vinyl chloride                   | 75-01-4  | Y         | 5.6E+00 | 5.6E+00 | ug/L  | 3.8E-04                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 2.7E-04     | 1.7E-04                        | mg/kg-day | 3.0E-03 | mg/kg-day | 5.6E-02         | 2.8E-04           | mg/kg-day | 3.0E-03 | mg/kg-day | 9.3E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | Ingestion Total              |                                  |          |           |         |         |       |                              |           |               |               | 3.1E-04     | 2.7E+00                        |           |         |           |                 | 4.5E+00           |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Groundwater       | Groundwater     | Tapwater                 | Dermal         | VOC                          | 1,1,2,2-Tetrachloroethane        | 79-34-5  | N         | 4.3E-01 | 4.3E-01 | ug/L  | 7.1E-07                      | mg/kg-day | 2.0E-01       | (mg/kg-day)-1 | 1.4E-07     | 1.6E-06                        | mg/kg-day | 2.0E-02 | mg/kg-day | 7.8E-05         | 2.4E-06           | mg/kg-day | 2.0E-02 | mg/kg-day | 1.2E-04         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Carbon tetrachloride             | 56-23-5  | N         | 1.1E+00 | 1.1E+00 | ug/L  | 3.8E-06                      | mg/kg-day | 7.0E-02       | (mg/kg-day)-1 | 2.7E-07     | 8.5E-06                        | mg/kg-day | 4.0E-03 | mg/kg-day | 2.1E-03         | 1.3E-05           | mg/kg-day | 4.0E-03 | mg/kg-day | 3.2E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Chloroform                       | 67-66-3  | N         | 1.1E+01 | 1.1E+01 | ug/L  | 1.3E-05                      | mg/kg-day | 3.1E-02       | (mg/kg-day)-1 | 4.1E-07     | 2.9E-05                        | mg/kg-day | 1.0E-02 | mg/kg-day | 2.9E-03         | 4.3E-05           | mg/kg-day | 1.0E-02 | mg/kg-day | 4.3E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | cis-1,2-Dichloroethylene         | 156-59-2 | N         | 2.0E+01 | 2.0E+01 | ug/L  | 3.3E-05                      | mg/kg-day |               |               |             | 7.3E-05                        | mg/kg-day | 2.0E-03 | mg/kg-day | 3.7E-02         | 1.1E-04           | mg/kg-day | 2.0E-03 | mg/kg-day | 5.5E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | N         | 2.9E+03 | 2.9E+03 | ug/L  | 3.7E-04                      | mg/kg-day |               |               |             | 8.2E-04                        | mg/kg-day | 6.0E-01 | mg/kg-day | 1.4E-03         | 1.2E-03           | mg/kg-day | 6.0E-01 | mg/kg-day | 2.0E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Tetrachloroethylene              | 127-18-4 | N         | 8.8E+01 | 8.8E+01 | ug/L  | 6.9E-04                      | mg/kg-day | 2.1E-03       | (mg/kg-day)-1 | 1.5E-06     | 1.5E-03                        | mg/kg-day | 6.0E-03 | mg/kg-day | 2.5E-01         | 2.3E-03           | mg/kg-day | 6.0E-03 | mg/kg-day | 3.8E-01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Trichloroethylene                | 79-01-6  | Y         | 2.8E+01 | 2.8E+01 | ug/L  | 8.9E-05                      | mg/kg-day | 4.6E-02       | (mg/kg-day)-1 | 4.1E-06     | 1.4E-04                        | mg/kg-day | 5.0E-04 | mg/kg-day | 2.7E-01         | 2.1E-04           | mg/kg-day | 5.0E-04 | mg/kg-day | 4.1E-01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Vinyl chloride                   | 75-01-4  | Y         | 5.6E+00 | 5.6E+00 | ug/L  | 2.6E-05                      | mg/kg-day | 7.2E-01       | (mg/kg-day)-1 | 1.8E-05     | 1.3E-05                        | mg/kg-day | 3.0E-03 | mg/kg-day | 4.3E-03         | 1.9E-05           | mg/kg-day | 3.0E-03 | mg/kg-day | 6.3E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | Dermal Total                 |                                  |          |           |         |         |       |                              |           |               |               | 2.5E-05     | 5.7E-01                        |           |         |           |                 | 8.6E-01           |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Groundwater       | Groundwater     | Water Vapors in Bathroom | Inhalation     | VOC                          | 1,1,2,2-Tetrachloroethane        | 79-34-5  | N         | 1.3E-02 | 1.5E-02 | mg/m3 | 1.3E-04                      | mg/m3     | 5.8E-02       | (mg/m3)-1     | 7.8E-06     | 3.8E-04                        | mg/m3     |         |           | 9.5E-03         | 3.2E-04           | mg/m3     |         |           | 8.0E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Carbon tetrachloride             | 56-23-5  | N         | 3.3E-02 | 3.7E-02 | mg/m3 | 3.4E-04                      | mg/m3     | 6.0E-03       | (mg/m3)-1     | 2.0E-06     | 9.5E-04                        | mg/m3     | 1.0E-01 | mg/m3     | 9.5E-03         | 8.0E-04           | mg/m3     | 1.0E-01 | mg/m3     | 8.0E-03         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Chloroform                       | 67-66-3  | N         | 3.4E-01 | 3.8E-01 | mg/m3 | 3.5E-03                      | mg/m3     | 2.3E-02       | (mg/m3)-1     | 7.9E-05     | 9.6E-03                        | mg/m3     | 9.8E-02 | mg/m3     | 9.8E-02         | 8.2E-03           | mg/m3     | 9.8E-02 | mg/m3     | 8.3E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | cis-1,2-Dichloroethylene         | 156-59-2 | N         | 6.2E-01 | 6.9E-01 | mg/m3 | 6.3E-03                      | mg/m3     |               |               |             | 1.8E-02                        | mg/m3     |         |           | 1.5E-02         | 1.5E-02           | mg/m3     |         |           | 1.5E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Methyl Ethyl Ketone (2-butanone) | 78-93-3  | N         | 9.0E+01 | 1.0E+02 | mg/m3 | 9.1E-01                      | mg/m3     |               |               |             | 2.6E+00                        | mg/m3     | 5.0E+00 | mg/m3     | 5.1E-01         | 2.2E+00           | mg/m3     | 5.0E+00 | mg/m3     | 4.3E-01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Tetrachloroethylene              | 127-18-4 | N         | 2.7E+00 | 3.0E+00 | mg/m3 | 2.8E-02                      | mg/m3     | 2.6E-04       | (mg/m3)-1     | 7.2E-06     | 7.7E-02                        | mg/m3     | 4.0E-02 | mg/m3     | 1.9E+00         | 6.5E-02           | mg/m3     | 4.0E-02 | mg/m3     | 1.6E+00         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Trichloroethylene                | 79-01-6  | Y         | 8.8E-01 | 9.7E-01 | mg/m3 | 2.4E-02                      | mg/m3     | 4.1E-03       | (mg/m3)-1     | 1.0E-04     | 2.5E-02                        | mg/m3     | 2.0E-03 | mg/m3     | 1.2E+01         | 2.1E-02           | mg/m3     | 2.0E-03 | mg/m3     | 1.1E+01         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | VOC                          | Vinyl chloride                   | 75-01-4  | Y         | 1.7E-01 | 1.9E-01 | mg/m3 | 2.0E-01                      | mg/m3     | 4.4E-03       | (mg/m3)-1     | 8.6E-04     | 4.9E-03                        | mg/m3     | 1.0E-01 | mg/m3     | 4.9E-02         | 4.2E-03           | mg/m3     | 1.0E-01 | mg/m3     | 4.2E-02         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                | Water Vapor Inhalation Total |                                  |          |           |         |         |       |                              |           |               |               | 1.1E-03     | 1.5E+01                        |           |         |           |                 | 1.3E+01           |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               |             |                                |           |         |           |                 |                   |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Groundwater Total |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               | 1.4E-03     | 1.8E+01                        |           |         |           |                 | 1.8E+01           |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Receptor Total    |                 |                          |                |                              |                                  |          |           |         |         |       |                              |           |               |               | 1.4E-03     | 1.8E+01                        |           |         |           |                 | 1.8E+01           |           |         |           |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Notes:

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL), except when the UCL was greater than the maximum detected concentration or ProUCL did not calculate an UCL.

The constituent of potential concern (COPC) list is based on exceedances from screening of maximum detected concentrations against risk-based criteria in the Table 2s.

The single-chemical cancer risks incorporate the one hit equations for cancer risks > 0.01, per RAGs Part A Chapter 8: Risk = 1 - exp(-Dose x SF).

RAGS Part E does not provide dermal soil absorption fraction values (ABSd) for most VOCs; therefore a dermally absorbed dose is not calculated.

The age-adjustments for a resident's cancer risk are calculated in Table 4.Supp.1.

The exposure intakes for MMOA chemicals (e.g., chromium) are adjusted for age are calculated in Tables 4.Supp.2.

The DAvent values for dermal exposure to groundwater are calculated in Table 4.Supp.3A to D.

The inhalation pathway uses groundwater-derived shower vapors (Ca) as the EPC, which are calculated using the Andelman model modified by Schaum et al, in Table 4.Supp.4A, B and C.

For a resident's exposure to vinyl chloride in soil for a cancer endpoint, the CA is calculated using only the volatilization pathway (as opposed to also including the particulate pathway) as presented in the USEPA RSL equations.

Abbreviations:

COPC – Constituent of potential concern

CSF – Oral cancer slope factor

EPC – Exposure point concentration

IUR - Inhalation unit risk

RfC – Inhalation reference concentration

RfD – Oral or dermal reference dose

UCL – Upper confidence limit



TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| UCL Statistics for Data Sets with Non-Detects                             |  |                                |  |                                                                 |  |       |  |  |  |
|---------------------------------------------------------------------------|--|--------------------------------|--|-----------------------------------------------------------------|--|-------|--|--|--|
| User Selected Options                                                     |  |                                |  |                                                                 |  |       |  |  |  |
| Date/Time of Computation                                                  |  | ProUCL 5.18/18/2017 1:04:02 PM |  |                                                                 |  |       |  |  |  |
| From File                                                                 |  | WorkSheet.xls                  |  |                                                                 |  |       |  |  |  |
| Full Precision                                                            |  | OFF                            |  |                                                                 |  |       |  |  |  |
| Confidence Coefficient                                                    |  | 95%                            |  |                                                                 |  |       |  |  |  |
| Number of Bootstrap Operations                                            |  | 2000                           |  |                                                                 |  |       |  |  |  |
| result (fluvial_1,1,2,2-tetrachloroethane_79-34-5)                        |  |                                |  |                                                                 |  |       |  |  |  |
| General Statistics                                                        |  |                                |  |                                                                 |  |       |  |  |  |
| Total Number of Observations                                              |  | 10                             |  | Number of Distinct Observations                                 |  | 10    |  |  |  |
|                                                                           |  |                                |  | Number of Missing Observations                                  |  | 0     |  |  |  |
| Minimum                                                                   |  | 0.658                          |  | Mean                                                            |  | 1.297 |  |  |  |
| Maximum                                                                   |  | 2.4                            |  | Median                                                          |  | 1.035 |  |  |  |
| SD                                                                        |  | 0.601                          |  | Std. Error of Mean                                              |  | 0.19  |  |  |  |
| Coefficient of Variation                                                  |  | 0.463                          |  | Skewness                                                        |  | 0.954 |  |  |  |
| Normal GOF Test                                                           |  |                                |  |                                                                 |  |       |  |  |  |
| Shapiro Wilk Test Statistic                                               |  | 0.875                          |  | Shapiro Wilk GOF Test                                           |  |       |  |  |  |
| 5% Shapiro Wilk Critical Value                                            |  | 0.842                          |  | Data appear Normal at 5% Significance Level                     |  |       |  |  |  |
| Lilliefors Test Statistic                                                 |  | 0.228                          |  | Lilliefors GOF Test                                             |  |       |  |  |  |
| 5% Lilliefors Critical Value                                              |  | 0.262                          |  | Data appear Normal at 5% Significance Level                     |  |       |  |  |  |
| Data appear Normal at 5% Significance Level                               |  |                                |  |                                                                 |  |       |  |  |  |
| Assuming Normal Distribution                                              |  |                                |  |                                                                 |  |       |  |  |  |
| 95% Normal UCL                                                            |  |                                |  | 95% UCLs (Adjusted for Skewness)                                |  |       |  |  |  |
| 95% Student's-t UCL                                                       |  | 1.645                          |  | 95% Adjusted-CLT UCL (Chen-1995)                                |  | 1.671 |  |  |  |
|                                                                           |  |                                |  | 95% Modified-t UCL (Johnson-1978)                               |  | 1.655 |  |  |  |
| Gamma GOF Test                                                            |  |                                |  |                                                                 |  |       |  |  |  |
| A-D Test Statistic                                                        |  | 0.413                          |  | Anderson-Darling Gamma GOF Test                                 |  |       |  |  |  |
| 5% A-D Critical Value                                                     |  | 0.729                          |  | Detected data appear Gamma Distributed at 5% Significance Level |  |       |  |  |  |
| K-S Test Statistic                                                        |  | 0.199                          |  | Kolmogorov-Smimov Gamma GOF Test                                |  |       |  |  |  |
| 5% K-S Critical Value                                                     |  | 0.267                          |  | Detected data appear Gamma Distributed at 5% Significance Level |  |       |  |  |  |
| Detected data appear Gamma Distributed at 5% Significance Level           |  |                                |  |                                                                 |  |       |  |  |  |
| Gamma Statistics                                                          |  |                                |  |                                                                 |  |       |  |  |  |
| k hat (MLE)                                                               |  | 5.713                          |  | k star (bias corrected MLE)                                     |  | 4.066 |  |  |  |
| Theta hat (MLE)                                                           |  | 0.227                          |  | Theta star (bias corrected MLE)                                 |  | 0.319 |  |  |  |
| nu hat (MLE)                                                              |  | 114.3                          |  | nu star (bias corrected)                                        |  | 81.32 |  |  |  |
| MLE Mean (bias corrected)                                                 |  | 1.297                          |  | MLE Sd (bias corrected)                                         |  | 0.643 |  |  |  |
|                                                                           |  |                                |  | Approximate Chi Square Value (0.05)                             |  | 61.54 |  |  |  |
| Adjusted Level of Significance                                            |  | 0.0267                         |  | Adjusted Chi Square Value                                       |  | 58.56 |  |  |  |
| Assuming Gamma Distribution                                               |  |                                |  |                                                                 |  |       |  |  |  |
| 95% Approximate Gamma UCL (use when n>=50))                               |  | 1.714                          |  | 95% Adjusted Gamma UCL (use when n<50)                          |  | 1.801 |  |  |  |
| Lognormal GOF Test                                                        |  |                                |  |                                                                 |  |       |  |  |  |
| Shapiro Wilk Test Statistic                                               |  | 0.933                          |  | Shapiro Wilk Lognormal GOF Test                                 |  |       |  |  |  |
| 5% Shapiro Wilk Critical Value                                            |  | 0.842                          |  | Data appear Lognormal at 5% Significance Level                  |  |       |  |  |  |
| Lilliefors Test Statistic                                                 |  | 0.176                          |  | Lilliefors Lognormal GOF Test                                   |  |       |  |  |  |
| 5% Lilliefors Critical Value                                              |  | 0.262                          |  | Data appear Lognormal at 5% Significance Level                  |  |       |  |  |  |
| Data appear Lognormal at 5% Significance Level                            |  |                                |  |                                                                 |  |       |  |  |  |
| Lognormal Statistics                                                      |  |                                |  |                                                                 |  |       |  |  |  |
| Minimum of Logged Data                                                    |  | -0.419                         |  | Mean of logged Data                                             |  | 0.17  |  |  |  |
| Maximum of Logged Data                                                    |  | 0.875                          |  | SD of logged Data                                               |  | 0.441 |  |  |  |
| Assuming Lognormal Distribution                                           |  |                                |  |                                                                 |  |       |  |  |  |
| 95% H-UCL                                                                 |  | 1.789                          |  | 90% Chebyshev (MVUE) UCL                                        |  | 1.841 |  |  |  |
| 95% Chebyshev (MVUE) UCL                                                  |  | 2.09                           |  | 97.5% Chebyshev (MVUE) UCL                                      |  | 2.435 |  |  |  |
| 99% Chebyshev (MVUE) UCL                                                  |  | 3.113                          |  |                                                                 |  |       |  |  |  |
| Nonparametric Distribution Free UCL Statistics                            |  |                                |  |                                                                 |  |       |  |  |  |
| Data appear to follow a Discernible Distribution at 5% Significance Level |  |                                |  |                                                                 |  |       |  |  |  |
| Nonparametric Distribution Free UCLs                                      |  |                                |  |                                                                 |  |       |  |  |  |
| 95% CLT UCL                                                               |  | 1.609                          |  | 95% Jackknife UCL                                               |  | 1.645 |  |  |  |
| 95% Standard Bootstrap UCL                                                |  | 1.586                          |  | 95% Bootstrap-t UCL                                             |  | 1.793 |  |  |  |
| 95% Hall's Bootstrap UCL                                                  |  | 1.774                          |  | 95% Percentile Bootstrap UCL                                    |  | 1.602 |  |  |  |
| 95% BCA Bootstrap UCL                                                     |  | 1.618                          |  |                                                                 |  |       |  |  |  |
| 90% Chebyshev(Mean, Sd) UCL                                               |  | 1.867                          |  | 95% Chebyshev(Mean, Sd) UCL                                     |  | 2.125 |  |  |  |
| 97.5% Chebyshev(Mean, Sd) UCL                                             |  | 2.484                          |  | 99% Chebyshev(Mean, Sd) UCL                                     |  | 3.188 |  |  |  |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                     |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------|-------|
| Suggested UCL to Use                                                                                                                      |        |                                                     |       |
| 95% Student's-t UCL                                                                                                                       | 1.645  |                                                     |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                     |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                     |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                     |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                     |       |
| result (fluvial_1,1-dichloroethene_75-35-4)                                                                                               |        |                                                     |       |
| General Statistics                                                                                                                        |        |                                                     |       |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                     | 10    |
|                                                                                                                                           |        | Number of Missing Observations                      | 0     |
| Minimum                                                                                                                                   | 2.08   | Mean                                                | 5     |
| Maximum                                                                                                                                   | 13.6   | Median                                              | 3.215 |
| SD                                                                                                                                        | 4.34   | Std. Error of Mean                                  | 1.373 |
| Coefficient of Variation                                                                                                                  | 0.868  | Skewness                                            | 1.664 |
| Normal GOF Test                                                                                                                           |        |                                                     |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.667  | Shapiro Wilk GOF Test                               |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Normal at 5% Significance Level            |       |
| Lilliefors Test Statistic                                                                                                                 | 0.369  | Lilliefors GOF Test                                 |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data Not Normal at 5% Significance Level            |       |
| Data Not Normal at 5% Significance Level                                                                                                  |        |                                                     |       |
| Assuming Normal Distribution                                                                                                              |        |                                                     |       |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                    |       |
| 95% Student's-t UCL                                                                                                                       | 7.516  | 95% Adjusted-CLT UCL (Chen-1995)                    | 8.03  |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                   | 7.636 |
| Gamma GOF Test                                                                                                                            |        |                                                     |       |
| A-D Test Statistic                                                                                                                        | 1.15   | Anderson-Darling Gamma GOF Test                     |       |
| 5% A-D Critical Value                                                                                                                     | 0.735  | Data Not Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.301  | Kolmogorov-Smirnov Gamma GOF Test                   |       |
| 5% K-S Critical Value                                                                                                                     | 0.27   | Data Not Gamma Distributed at 5% Significance Level |       |
| Data Not Gamma Distributed at 5% Significance Level                                                                                       |        |                                                     |       |
| Gamma Statistics                                                                                                                          |        |                                                     |       |
| k hat (MLE)                                                                                                                               | 2.148  | k star (bias corrected MLE)                         | 1.57  |
| Theta hat (MLE)                                                                                                                           | 2.328  | Theta star (bias corrected MLE)                     | 3.184 |
| nu hat (MLE)                                                                                                                              | 42.96  | nu star (bias corrected)                            | 31.41 |
| MLE Mean (bias corrected)                                                                                                                 | 5      | MLE Sd (bias corrected)                             | 3.99  |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                 | 19.6  |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                           | 18    |
| Assuming Gamma Distribution                                                                                                               |        |                                                     |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 8.011  | 95% Adjusted Gamma UCL (use when n<50)              | 8.725 |
| Lognormal GOF Test                                                                                                                        |        |                                                     |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.802  | Shapiro Wilk Lognormal GOF Test                     |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Lognormal at 5% Significance Level         |       |
| Lilliefors Test Statistic                                                                                                                 | 0.25   | Lilliefors Lognormal GOF Test                       |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level      |       |
| Data appear Approximate Lognormal at 5% Significance Level                                                                                |        |                                                     |       |
| Lognormal Statistics                                                                                                                      |        |                                                     |       |
| Minimum of Logged Data                                                                                                                    | 0.732  | Mean of logged Data                                 | 1.359 |
| Maximum of Logged Data                                                                                                                    | 2.61   | SD of logged Data                                   | 0.685 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                     |       |
| 95% H-UCL                                                                                                                                 | 8.724  | 90% Chebyshev (MVUE) UCL                            | 7.995 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 9.447  | 97.5% Chebyshev (MVUE) UCL                          | 11.46 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 15.42  |                                                     |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                     |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                     |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                     |       |
| 95% CLT UCL                                                                                                                               | 7.258  | 95% Jackknife UCL                                   | 7.516 |
| 95% Standard Bootstrap UCL                                                                                                                | 7.146  | 95% Bootstrap-t UCL                                 | 16.12 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 22.09  | 95% Percentile Bootstrap UCL                        | 7.279 |
| 95% BCA Bootstrap UCL                                                                                                                     | 8.048  |                                                     |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 9.118  | 95% Chebyshev(Mean, Sd) UCL                         | 10.98 |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                  |  |        |                                                     |  |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|-----------------------------------------------------|--|-------|
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                    |  | 13.57  | 99% Chebyshev(Mean, Sd) UCL                         |  | 18.66 |
| Suggested UCL to Use                                                                                                                                                                             |  |        |                                                     |  |       |
| 95% H-UCL                                                                                                                                                                                        |  | 8.724  |                                                     |  |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                     |  |        |                                                     |  |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                       |  |        |                                                     |  |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                         |  |        |                                                     |  |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                        |  |        |                                                     |  |       |
| ProUCL computes and outputs H-statistic based UCLs for historical reasons only.                                                                                                                  |  |        |                                                     |  |       |
| H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.                                                                           |  |        |                                                     |  |       |
| It is therefore recommended to avoid the use of H-statistic based 95% UCLs.                                                                                                                      |  |        |                                                     |  |       |
| Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.                                                                       |  |        |                                                     |  |       |
| result (fluvial_1,2,3-trichloropropane_96-18-4)                                                                                                                                                  |  |        |                                                     |  |       |
| General Statistics                                                                                                                                                                               |  |        |                                                     |  |       |
| Total Number of Observations                                                                                                                                                                     |  | 9      | Number of Distinct Observations                     |  | 9     |
|                                                                                                                                                                                                  |  |        | Number of Missing Observations                      |  | 0     |
| Minimum                                                                                                                                                                                          |  | 10.1   | Mean                                                |  | 32.59 |
| Maximum                                                                                                                                                                                          |  | 83.3   | Median                                              |  | 19.4  |
| SD                                                                                                                                                                                               |  | 27.14  | Std. Error of Mean                                  |  | 9.048 |
| Coefficient of Variation                                                                                                                                                                         |  | 0.833  | Skewness                                            |  | 1.081 |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |  |        |                                                     |  |       |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |  |        |                                                     |  |       |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |  |        |                                                     |  |       |
| Normal GOF Test                                                                                                                                                                                  |  |        |                                                     |  |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      |  | 0.789  | Shapiro Wilk GOF Test                               |  |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   |  | 0.829  | Data Not Normal at 5% Significance Level            |  |       |
| Lilliefors Test Statistic                                                                                                                                                                        |  | 0.349  | Lilliefors GOF Test                                 |  |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     |  | 0.274  | Data Not Normal at 5% Significance Level            |  |       |
| Data Not Normal at 5% Significance Level                                                                                                                                                         |  |        |                                                     |  |       |
| Assuming Normal Distribution                                                                                                                                                                     |  |        |                                                     |  |       |
| 95% Normal UCL                                                                                                                                                                                   |  |        | 95% UCLs (Adjusted for Skewness)                    |  |       |
| 95% Student's-t UCL                                                                                                                                                                              |  | 49.41  | 95% Adjusted-CLT UCL (Chen-1995)                    |  | 50.96 |
|                                                                                                                                                                                                  |  |        | 95% Modified-t UCL (Johnson-1978)                   |  | 49.96 |
| Gamma GOF Test                                                                                                                                                                                   |  |        |                                                     |  |       |
| A-D Test Statistic                                                                                                                                                                               |  | 0.748  | Anderson-Darling Gamma GOF Test                     |  |       |
| 5% A-D Critical Value                                                                                                                                                                            |  | 0.731  | Data Not Gamma Distributed at 5% Significance Level |  |       |
| K-S Test Statistic                                                                                                                                                                               |  | 0.315  | Kolmogorov-Smirnov Gamma GOF Test                   |  |       |
| 5% K-S Critical Value                                                                                                                                                                            |  | 0.283  | Data Not Gamma Distributed at 5% Significance Level |  |       |
| Data Not Gamma Distributed at 5% Significance Level                                                                                                                                              |  |        |                                                     |  |       |
| Gamma Statistics                                                                                                                                                                                 |  |        |                                                     |  |       |
| k hat (MLE)                                                                                                                                                                                      |  | 1.874  | k star (bias corrected MLE)                         |  | 1.323 |
| Theta hat (MLE)                                                                                                                                                                                  |  | 17.39  | Theta star (bias corrected MLE)                     |  | 24.63 |
| nu hat (MLE)                                                                                                                                                                                     |  | 33.73  | nu star (bias corrected)                            |  | 23.82 |
| MLE Mean (bias corrected)                                                                                                                                                                        |  | 32.59  | MLE Sd (bias corrected)                             |  | 28.33 |
|                                                                                                                                                                                                  |  |        | Approximate Chi Square Value (0.05)                 |  | 13.71 |
| Adjusted Level of Significance                                                                                                                                                                   |  | 0.0231 | Adjusted Chi Square Value                           |  | 12.12 |
| Assuming Gamma Distribution                                                                                                                                                                      |  |        |                                                     |  |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                      |  | 56.61  | 95% Adjusted Gamma UCL (use when n<50)              |  | 64.03 |
| Lognormal GOF Test                                                                                                                                                                               |  |        |                                                     |  |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      |  | 0.87   | Shapiro Wilk Lognormal GOF Test                     |  |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   |  | 0.829  | Data appear Lognormal at 5% Significance Level      |  |       |
| Lilliefors Test Statistic                                                                                                                                                                        |  | 0.273  | Lilliefors Lognormal GOF Test                       |  |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     |  | 0.274  | Data appear Lognormal at 5% Significance Level      |  |       |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                   |  |        |                                                     |  |       |
| Lognormal Statistics                                                                                                                                                                             |  |        |                                                     |  |       |
| Minimum of Logged Data                                                                                                                                                                           |  | 2.313  | Mean of logged Data                                 |  | 3.194 |
| Maximum of Logged Data                                                                                                                                                                           |  | 4.422  | SD of logged Data                                   |  | 0.789 |
| Assuming Lognormal Distribution                                                                                                                                                                  |  |        |                                                     |  |       |
| 95% H-UCL                                                                                                                                                                                        |  | 72.43  | 90% Chebyshev (MVUE) UCL                            |  | 57.8  |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                         |  | 69.52  | 97.5% Chebyshev (MVUE) UCL                          |  | 85.79 |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

99% Chebyshev (MVUE) UCL 117.8

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

|                               |       |                              |       |
|-------------------------------|-------|------------------------------|-------|
| 95% CLT UCL                   | 47.47 | 95% Jackknife UCL            | 49.41 |
| 95% Standard Bootstrap UCL    | 46.74 | 95% Bootstrap-t UCL          | 56.69 |
| 95% Hall's Bootstrap UCL      | 43.87 | 95% Percentile Bootstrap UCL | 47.14 |
| 95% BCA Bootstrap UCL         | 49.92 |                              |       |
| 90% Chebyshev(Mean, Sd) UCL   | 59.73 | 95% Chebyshev(Mean, Sd) UCL  | 72.03 |
| 97.5% Chebyshev(Mean, Sd) UCL | 89.09 | 99% Chebyshev(Mean, Sd) UCL  | 122.6 |

Suggested UCL to Use

|           |       |
|-----------|-------|
| 95% H-UCL | 72.43 |
|-----------|-------|

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.

H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.

It is therefore recommended to avoid the use of H-statistic based 95% UCLs.

Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

result (fluvial\_1,2,4-trimethylbenzene\_95-63-6)

General Statistics

|                              |       |                                 |       |
|------------------------------|-------|---------------------------------|-------|
| Total Number of Observations | 10    | Number of Distinct Observations | 10    |
|                              |       | Number of Missing Observations  | 0     |
| Minimum                      | 3.91  | Mean                            | 37.09 |
| Maximum                      | 142   | Median                          | 23    |
| SD                           | 43    | Std. Error of Mean              | 13.6  |
| Coefficient of Variation     | 1.159 | Skewness                        | 1.847 |

Normal GOF Test

|                                |       |                                             |
|--------------------------------|-------|---------------------------------------------|
| Shapiro Wilk Test Statistic    | 0.774 | Shapiro Wilk GOF Test                       |
| 5% Shapiro Wilk Critical Value | 0.842 | Data Not Normal at 5% Significance Level    |
| Lilliefors Test Statistic      | 0.233 | Lilliefors GOF Test                         |
| 5% Lilliefors Critical Value   | 0.262 | Data appear Normal at 5% Significance Level |

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

|                     |       |                                   |       |
|---------------------|-------|-----------------------------------|-------|
| 95% Normal UCL      |       | 95% UCLs (Adjusted for Skewness)  |       |
| 95% Student's-t UCL | 62.02 | 95% Adjusted-CLT UCL (Chen-1995)  | 67.95 |
|                     |       | 95% Modified-t UCL (Johnson-1978) | 63.34 |

Gamma GOF Test

|                       |       |                                                                 |
|-----------------------|-------|-----------------------------------------------------------------|
| A-D Test Statistic    | 0.433 | Anderson-Darling Gamma GOF Test                                 |
| 5% A-D Critical Value | 0.75  | Detected data appear Gamma Distributed at 5% Significance Level |
| K-S Test Statistic    | 0.215 | Kolmogorov-Smirnov Gamma GOF Test                               |
| 5% K-S Critical Value | 0.274 | Detected data appear Gamma Distributed at 5% Significance Level |

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

|                                |        |                                     |       |
|--------------------------------|--------|-------------------------------------|-------|
| k hat (MLE)                    | 0.945  | k star (bias corrected MLE)         | 0.728 |
| Theta hat (MLE)                | 39.24  | Theta star (bias corrected MLE)     | 50.93 |
| nu hat (MLE)                   | 18.9   | nu star (bias corrected)            | 14.56 |
| MLE Mean (bias corrected)      | 37.09  | MLE Sd (bias corrected)             | 43.46 |
|                                |        | Approximate Chi Square Value (0.05) | 6.96  |
| Adjusted Level of Significance | 0.0267 | Adjusted Chi Square Value           | 6.069 |

Assuming Gamma Distribution

|                                             |       |                                        |       |
|---------------------------------------------|-------|----------------------------------------|-------|
| 95% Approximate Gamma UCL (use when n>=50)) | 77.62 | 95% Adjusted Gamma UCL (use when n<50) | 89.01 |
|---------------------------------------------|-------|----------------------------------------|-------|

Lognormal GOF Test

|                                |       |                                                |
|--------------------------------|-------|------------------------------------------------|
| Shapiro Wilk Test Statistic    | 0.932 | Shapiro Wilk Lognormal GOF Test                |
| 5% Shapiro Wilk Critical Value | 0.842 | Data appear Lognormal at 5% Significance Level |
| Lilliefors Test Statistic      | 0.17  | Lilliefors Lognormal GOF Test                  |
| 5% Lilliefors Critical Value   | 0.262 | Data appear Lognormal at 5% Significance Level |

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                  |        |                                                                 |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|--------|
| Minimum of Logged Data                                                                                                                                                                           | 1.364  | Mean of logged Data                                             | 2.998  |
| Maximum of Logged Data                                                                                                                                                                           | 4.956  | SD of logged Data                                               | 1.21   |
| Assuming Lognormal Distribution                                                                                                                                                                  |        |                                                                 |        |
| 95% H-UCL                                                                                                                                                                                        | 174.7  | 90% Chebyshev (MVUE) UCL                                        | 82.83  |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                         | 103.4  | 97.5% Chebyshev (MVUE) UCL                                      | 131.9  |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                         | 188    |                                                                 |        |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                   |        |                                                                 |        |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                        |        |                                                                 |        |
| Nonparametric Distribution Free UCLs                                                                                                                                                             |        |                                                                 |        |
| 95% CLT UCL                                                                                                                                                                                      | 59.46  | 95% Jackknife UCL                                               | 62.02  |
| 95% Standard Bootstrap UCL                                                                                                                                                                       | 57.83  | 95% Bootstrap-t UCL                                             | 81.75  |
| 95% Hall's Bootstrap UCL                                                                                                                                                                         | 159.5  | 95% Percentile Bootstrap UCL                                    | 60.15  |
| 95% BCA Bootstrap UCL                                                                                                                                                                            | 67.45  |                                                                 |        |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                      | 77.88  | 95% Chebyshev(Mean, Sd) UCL                                     | 96.36  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                    | 122    | 99% Chebyshev(Mean, Sd) UCL                                     | 172.4  |
| Suggested UCL to Use                                                                                                                                                                             |        |                                                                 |        |
| 95% Student's-t UCL                                                                                                                                                                              | 62.02  |                                                                 |        |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                                                                                   |        |                                                                 |        |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                                                                           |        |                                                                 |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                     |        |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                       |        |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                         |        |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                        |        |                                                                 |        |
| result (fluvial_1,2-dichloroethane_107-06-2)                                                                                                                                                     |        |                                                                 |        |
| General Statistics                                                                                                                                                                               |        |                                                                 |        |
| Total Number of Observations                                                                                                                                                                     | 6      | Number of Distinct Observations                                 | 6      |
|                                                                                                                                                                                                  |        | Number of Missing Observations                                  | 0      |
| Minimum                                                                                                                                                                                          | 0.583  | Mean                                                            | 8.247  |
| Maximum                                                                                                                                                                                          | 14.7   | Median                                                          | 8.29   |
| SD                                                                                                                                                                                               | 5.151  | Std. Error of Mean                                              | 2.103  |
| Coefficient of Variation                                                                                                                                                                         | 0.625  | Skewness                                                        | -0.295 |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |        |                                                                 |        |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |        |                                                                 |        |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |        |                                                                 |        |
| Normal GOF Test                                                                                                                                                                                  |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.981  | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.788  | Data appear Normal at 5% Significance Level                     |        |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.129  | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.325  | Data appear Normal at 5% Significance Level                     |        |
| Data appear Normal at 5% Significance Level                                                                                                                                                      |        |                                                                 |        |
| Assuming Normal Distribution                                                                                                                                                                     |        |                                                                 |        |
| 95% Normal UCL                                                                                                                                                                                   |        | 95% UCLs (Adjusted for Skewness)                                |        |
| 95% Student's-t UCL                                                                                                                                                                              | 12.48  | 95% Adjusted-CLT UCL (Chen-1995)                                | 11.44  |
|                                                                                                                                                                                                  |        | 95% Modified-t UCL (Johnson-1978)                               | 12.44  |
| Gamma GOF Test                                                                                                                                                                                   |        |                                                                 |        |
| A-D Test Statistic                                                                                                                                                                               | 0.442  | Anderson-Darling Gamma GOF Test                                 |        |
| 5% A-D Critical Value                                                                                                                                                                            | 0.708  | Detected data appear Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                                                                               | 0.228  | Kolmogorov-Smirnov Gamma GOF Test                               |        |
| 5% K-S Critical Value                                                                                                                                                                            | 0.337  | Detected data appear Gamma Distributed at 5% Significance Level |        |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                                                                                  |        |                                                                 |        |
| Gamma Statistics                                                                                                                                                                                 |        |                                                                 |        |
| k hat (MLE)                                                                                                                                                                                      | 1.538  | k star (bias corrected MLE)                                     | 0.88   |
| Theta hat (MLE)                                                                                                                                                                                  | 5.363  | Theta star (bias corrected MLE)                                 | 9.372  |
| nu hat (MLE)                                                                                                                                                                                     | 18.45  | nu star (bias corrected)                                        | 10.56  |
| MLE Mean (bias corrected)                                                                                                                                                                        | 8.247  | MLE Sd (bias corrected)                                         | 8.792  |
|                                                                                                                                                                                                  |        | Approximate Chi Square Value (0.05)                             | 4.294  |
| Adjusted Level of Significance                                                                                                                                                                   | 0.0122 | Adjusted Chi Square Value                                       | 2.978  |
| Assuming Gamma Distribution                                                                                                                                                                      |        |                                                                 |        |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                      | 20.28  | 95% Adjusted Gamma UCL (use when n<50)                          | 29.25  |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                               |       |                                                |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------|-------|
| Lognormal GOF Test                                                                                                                                                                                            |       |                                                |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                                   | 0.789 | Shapiro Wilk Lognormal GOF Test                |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                | 0.788 | Data appear Lognormal at 5% Significance Level |       |
| Lilliefors Test Statistic                                                                                                                                                                                     | 0.294 | Lilliefors Lognormal GOF Test                  |       |
| 5% Lilliefors Critical Value                                                                                                                                                                                  | 0.325 | Data appear Lognormal at 5% Significance Level |       |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                                |       |                                                |       |
| Lognormal Statistics                                                                                                                                                                                          |       |                                                |       |
| Minimum of Logged Data                                                                                                                                                                                        | -0.54 | Mean of logged Data                            | 1.751 |
| Maximum of Logged Data                                                                                                                                                                                        | 2.688 | SD of logged Data                              | 1.187 |
| Assuming Lognormal Distribution                                                                                                                                                                               |       |                                                |       |
| 95% H-UCL                                                                                                                                                                                                     | 147.2 | 90% Chebyshev (MVUE) UCL                       | 23.95 |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 30.3  | 97.5% Chebyshev (MVUE) UCL                     | 39.12 |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 56.43 |                                                |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                                |       |                                                |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                                     |       |                                                |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                                          |       |                                                |       |
| 95% CLT UCL                                                                                                                                                                                                   | 11.71 | 95% Jackknife UCL                              | 12.48 |
| 95% Standard Bootstrap UCL                                                                                                                                                                                    | 11.35 | 95% Bootstrap-t UCL                            | 12.22 |
| 95% Hall's Bootstrap UCL                                                                                                                                                                                      | 11.53 | 95% Percentile Bootstrap UCL                   | 11.53 |
| 95% BCA Bootstrap UCL                                                                                                                                                                                         | 11.05 |                                                |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                   | 14.56 | 95% Chebyshev(Mean, Sd) UCL                    | 17.41 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                 | 21.38 | 99% Chebyshev(Mean, Sd) UCL                    | 29.17 |
| Suggested UCL to Use                                                                                                                                                                                          |       |                                                |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 12.48 |                                                |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |       |                                                |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |       |                                                |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |       |                                                |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |       |                                                |       |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |       |                                                |       |

result (fluvial\_1,2-dichloropropane\_78-87-5)

|                                                                                                                                                                                                  |       |                                                                 |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------|-------|
| General Statistics                                                                                                                                                                               |       |                                                                 |       |
| Total Number of Observations                                                                                                                                                                     | 7     | Number of Distinct Observations                                 | 7     |
|                                                                                                                                                                                                  |       | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                                                                          | 0.21  | Mean                                                            | 14.35 |
| Maximum                                                                                                                                                                                          | 44    | Median                                                          | 7.2   |
| SD                                                                                                                                                                                               | 15.65 | Std. Error of Mean                                              | 5.915 |
| Coefficient of Variation                                                                                                                                                                         | 1.091 | Skewness                                                        | 1.347 |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |       |                                                                 |       |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |       |                                                                 |       |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |       |                                                                 |       |
| Normal GOF Test                                                                                                                                                                                  |       |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.853 | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.803 | Data appear Normal at 5% Significance Level                     |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.247 | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.304 | Data appear Normal at 5% Significance Level                     |       |
| Data appear Normal at 5% Significance Level                                                                                                                                                      |       |                                                                 |       |
| Assuming Normal Distribution                                                                                                                                                                     |       |                                                                 |       |
| 95% Normal UCL                                                                                                                                                                                   |       | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                                                                              | 25.84 | 95% Adjusted-CLT UCL (Chen-1995)                                | 27.29 |
|                                                                                                                                                                                                  |       | 95% Modified-t UCL (Johnson-1978)                               | 26.34 |
| Gamma GOF Test                                                                                                                                                                                   |       |                                                                 |       |
| A-D Test Statistic                                                                                                                                                                               | 0.204 | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                                                                            | 0.737 | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                                                                               | 0.169 | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                                                                            | 0.323 | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                                                                                  |       |                                                                 |       |
| Gamma Statistics                                                                                                                                                                                 |       |                                                                 |       |



TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                                 |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|
| k hat (MLE)                                                                                                                               | 0.74   | k star (bias corrected MLE)                                     | 0.518 |
| Theta hat (MLE)                                                                                                                           | 19.4   | Theta star (bias corrected MLE)                                 | 27.7  |
| nu hat (MLE)                                                                                                                              | 10.35  | nu star (bias corrected)                                        | 7.25  |
| MLE Mean (bias corrected)                                                                                                                 | 14.35  | MLE Sd (bias corrected)                                         | 19.93 |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                             | 2.309 |
| Adjusted Level of Significance                                                                                                            | 0.0158 | Adjusted Chi Square Value                                       | 1.559 |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 45.05  | 95% Adjusted Gamma UCL (use when n<50)                          | 66.7  |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.899  | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.803  | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.252  | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.304  | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                                 |       |
| Lognormal Statistics                                                                                                                      |        |                                                                 |       |
| Minimum of Logged Data                                                                                                                    | -1.561 | Mean of logged Data                                             | 1.853 |
| Maximum of Logged Data                                                                                                                    | 3.784  | SD of logged Data                                               | 1.756 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |       |
| 95% H-UCL                                                                                                                                 | 2168   | 90% Chebyshev (MVUE) UCL                                        | 58.7  |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 76.1   | 97.5% Chebyshev (MVUE) UCL                                      | 100.3 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 147.7  |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |       |
| 95% CLT UCL                                                                                                                               | 24.08  | 95% Jackknife UCL                                               | 25.84 |
| 95% Standard Bootstrap UCL                                                                                                                | 23.36  | 95% Bootstrap-t UCL                                             | 41.11 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 68.14  | 95% Percentile Bootstrap UCL                                    | 24.13 |
| 95% BCA Bootstrap UCL                                                                                                                     | 26.87  |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 32.09  | 95% Chebyshev(Mean, Sd) UCL                                     | 40.13 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 51.29  | 99% Chebyshev(Mean, Sd) UCL                                     | 73.2  |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |       |
| 95% Student's-t UCL                                                                                                                       | 25.84  |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |       |
| result (fluvial_acetone_67-64-1)                                                                                                          |        |                                                                 |       |
| General Statistics                                                                                                                        |        |                                                                 |       |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                                 | 10    |
|                                                                                                                                           |        | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                   | 1220   | Mean                                                            | 3786  |
| Maximum                                                                                                                                   | 7790   | Median                                                          | 3410  |
| SD                                                                                                                                        | 2132   | Std. Error of Mean                                              | 674.3 |
| Coefficient of Variation                                                                                                                  | 0.563  | Skewness                                                        | 0.517 |
| Normal GOF Test                                                                                                                           |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.942  | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Normal at 5% Significance Level                     |       |
| Lilliefors Test Statistic                                                                                                                 | 0.151  | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Normal at 5% Significance Level                     |       |
| Data appear Normal at 5% Significance Level                                                                                               |        |                                                                 |       |
| Assuming Normal Distribution                                                                                                              |        |                                                                 |       |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                       | 5022   | 95% Adjusted-CLT UCL (Chen-1995)                                | 5013  |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                               | 5040  |
| Gamma GOF Test                                                                                                                            |        |                                                                 |       |
| A-D Test Statistic                                                                                                                        | 0.264  | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                     | 0.732  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.168  | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                     | 0.268  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |       |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Gamma Statistics                                                                                                                                                                                 |        |                                                |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------|-------|
| k hat (MLE)                                                                                                                                                                                      | 3.214  | k star (bias corrected MLE)                    | 2.316 |
| Theta hat (MLE)                                                                                                                                                                                  | 1178   | Theta star (bias corrected MLE)                | 1634  |
| nu hat (MLE)                                                                                                                                                                                     | 64.28  | nu star (bias corrected)                       | 46.33 |
| MLE Mean (bias corrected)                                                                                                                                                                        | 3786   | MLE Sd (bias corrected)                        | 2488  |
|                                                                                                                                                                                                  |        | Approximate Chi Square Value (0.05)            | 31.71 |
| Adjusted Level of Significance                                                                                                                                                                   | 0.0267 | Adjusted Chi Square Value                      | 29.62 |
| Assuming Gamma Distribution                                                                                                                                                                      |        |                                                |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                      | 5531   | 95% Adjusted Gamma UCL (use when n<50)         | 5921  |
| Lognormal GOF Test                                                                                                                                                                               |        |                                                |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.941  | Shapiro Wilk Lognormal GOF Test                |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.842  | Data appear Lognormal at 5% Significance Level |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.165  | Lilliefors Lognormal GOF Test                  |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.262  | Data appear Lognormal at 5% Significance Level |       |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                   |        |                                                |       |
| Lognormal Statistics                                                                                                                                                                             |        |                                                |       |
| Minimum of Logged Data                                                                                                                                                                           | 7.107  | Mean of logged Data                            | 8.075 |
| Maximum of Logged Data                                                                                                                                                                           | 8.961  | SD of logged Data                              | 0.63  |
| Assuming Lognormal Distribution                                                                                                                                                                  |        |                                                |       |
| 95% H-UCL                                                                                                                                                                                        | 6514   | 90% Chebyshev (MVUE) UCL                       | 6186  |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                         | 7251   | 97.5% Chebyshev (MVUE) UCL                     | 8730  |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                         | 11635  |                                                |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                   |        |                                                |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                        |        |                                                |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                             |        |                                                |       |
| 95% CLT UCL                                                                                                                                                                                      | 4895   | 95% Jackknife UCL                              | 5022  |
| 95% Standard Bootstrap UCL                                                                                                                                                                       | 4831   | 95% Bootstrap-t UCL                            | 5295  |
| 95% Hall's Bootstrap UCL                                                                                                                                                                         | 5033   | 95% Percentile Bootstrap UCL                   | 4891  |
| 95% BCA Bootstrap UCL                                                                                                                                                                            | 4879   |                                                |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                      | 5809   | 95% Chebyshev(Mean, Sd) UCL                    | 6725  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                    | 7997   | 99% Chebyshev(Mean, Sd) UCL                    | 10495 |
| Suggested UCL to Use                                                                                                                                                                             |        |                                                |       |
| 95% Student's-t UCL 5022                                                                                                                                                                         |        |                                                |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                     |        |                                                |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                       |        |                                                |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                         |        |                                                |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                        |        |                                                |       |
| result (fluvial_carbon tetrachloride_56-23-5)                                                                                                                                                    |        |                                                |       |
| General Statistics                                                                                                                                                                               |        |                                                |       |
| Total Number of Observations                                                                                                                                                                     | 9      | Number of Distinct Observations                | 9     |
|                                                                                                                                                                                                  |        | Number of Missing Observations                 | 0     |
| Minimum                                                                                                                                                                                          | 60.6   | Mean                                           | 109.9 |
| Maximum                                                                                                                                                                                          | 196    | Median                                         | 98.5  |
| SD                                                                                                                                                                                               | 44.98  | Std. Error of Mean                             | 14.99 |
| Coefficient of Variation                                                                                                                                                                         | 0.409  | Skewness                                       | 1.077 |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |        |                                                |       |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |        |                                                |       |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |        |                                                |       |
| Normal GOF Test                                                                                                                                                                                  |        |                                                |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.882  | Shapiro Wilk GOF Test                          |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.829  | Data appear Normal at 5% Significance Level    |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.259  | Lilliefors GOF Test                            |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.274  | Data appear Normal at 5% Significance Level    |       |
| Data appear Normal at 5% Significance Level                                                                                                                                                      |        |                                                |       |
| Assuming Normal Distribution                                                                                                                                                                     |        |                                                |       |
| 95% Normal UCL                                                                                                                                                                                   |        | 95% UCLs (Adjusted for Skewness)               |       |
| 95% Student's-t UCL                                                                                                                                                                              | 137.7  | 95% Adjusted-CLT UCL (Chen-1995)               | 140.3 |
|                                                                                                                                                                                                  |        | 95% Modified-t UCL (Johnson-1978)              | 138.6 |
| Gamma GOF Test                                                                                                                                                                                   |        |                                                |       |



TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |       |                                                                 |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------|-------|
| A-D Test Statistic                                                                                                                        |        | 0.356 | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                     | 0.722  |       | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        |        | 0.208 | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                     | 0.28   |       | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |       |                                                                 |       |
| Gamma Statistics                                                                                                                          |        |       |                                                                 |       |
| k hat (MLE)                                                                                                                               | 7.467  |       | k star (bias corrected MLE)                                     | 5.052 |
| Theta hat (MLE)                                                                                                                           | 14.71  |       | Theta star (bias corrected MLE)                                 | 21.75 |
| nu hat (MLE)                                                                                                                              | 134.4  |       | nu star (bias corrected)                                        | 90.94 |
| MLE Mean (bias corrected)                                                                                                                 | 109.9  |       | MLE Sd (bias corrected)                                         | 48.88 |
|                                                                                                                                           |        |       | Approximate Chi Square Value (0.05)                             | 69.95 |
| Adjusted Level of Significance                                                                                                            | 0.0231 |       | Adjusted Chi Square Value                                       | 66.08 |
| Assuming Gamma Distribution                                                                                                               |        |       |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 142.8  |       | 95% Adjusted Gamma UCL (use when n<50)                          | 151.2 |
| Lognormal GOF Test                                                                                                                        |        |       |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.945  |       | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.829  |       | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.188  |       | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.274  |       | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |       |                                                                 |       |
| Lognormal Statistics                                                                                                                      |        |       |                                                                 |       |
| Minimum of Logged Data                                                                                                                    | 4.104  |       | Mean of logged Data                                             | 4.631 |
| Maximum of Logged Data                                                                                                                    | 5.278  |       | SD of logged Data                                               | 0.386 |
| Assuming Lognormal Distribution                                                                                                           |        |       |                                                                 |       |
| 95% H-UCL                                                                                                                                 | 147.6  |       | 90% Chebyshev (MVUE) UCL                                        | 152.3 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 171.7  |       | 97.5% Chebyshev (MVUE) UCL                                      | 198.5 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 251.3  |       |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |       |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |       |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |       |                                                                 |       |
| 95% CLT UCL                                                                                                                               | 134.5  |       | 95% Jackknife UCL                                               | 137.7 |
| 95% Standard Bootstrap UCL                                                                                                                | 133.2  |       | 95% Bootstrap-t UCL                                             | 157.6 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 316.2  |       | 95% Percentile Bootstrap UCL                                    | 134   |
| 95% BCA Bootstrap UCL                                                                                                                     | 140.1  |       |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 154.8  |       | 95% Chebyshev(Mean, Sd) UCL                                     | 175.2 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 203.5  |       | 99% Chebyshev(Mean, Sd) UCL                                     | 259.1 |
| Suggested UCL to Use                                                                                                                      |        |       |                                                                 |       |
| 95% Student's-t UCL                                                                                                                       | 137.7  |       |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |       |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |       |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |       |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |       |                                                                 |       |
| result (fluvial_chloroform_67-66-3)                                                                                                       |        |       |                                                                 |       |
| General Statistics                                                                                                                        |        |       |                                                                 |       |
| Total Number of Observations                                                                                                              | 10     |       | Number of Distinct Observations                                 | 10    |
|                                                                                                                                           |        |       | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                   | 20     |       | Mean                                                            | 5898  |
| Maximum                                                                                                                                   | 22100  |       | Median                                                          | 2971  |
| SD                                                                                                                                        | 7504   |       | Std. Error of Mean                                              | 2373  |
| Coefficient of Variation                                                                                                                  | 1.272  |       | Skewness                                                        | 1.306 |
| Normal GOF Test                                                                                                                           |        |       |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.809  |       | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  |       | Data Not Normal at 5% Significance Level                        |       |
| Lilliefors Test Statistic                                                                                                                 | 0.267  |       | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  |       | Data Not Normal at 5% Significance Level                        |       |
| Data Not Normal at 5% Significance Level                                                                                                  |        |       |                                                                 |       |
| Assuming Normal Distribution                                                                                                              |        |       |                                                                 |       |
| 95% Normal UCL                                                                                                                            |        |       | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                       | 10248  |       | 95% Adjusted-CLT UCL (Chen-1995)                                | 10849 |
|                                                                                                                                           |        |       | 95% Modified-t UCL (Johnson-1978)                               | 10411 |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Gamma GOF Test                                                                                                                            |                                  |                                                                 |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------|-------|
| A-D Test Statistic                                                                                                                        | 0.519                            | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                     | 0.792                            | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.241                            | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                     | 0.284                            | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |                                  |                                                                 |       |
| Gamma Statistics                                                                                                                          |                                  |                                                                 |       |
| k hat (MLE)                                                                                                                               | 0.416                            | k star (bias corrected MLE)                                     | 0.358 |
| Theta hat (MLE)                                                                                                                           | 14174                            | Theta star (bias corrected MLE)                                 | 16477 |
| nu hat (MLE)                                                                                                                              | 8.322                            | nu star (bias corrected)                                        | 7.159 |
| MLE Mean (bias corrected)                                                                                                                 | 5898                             | MLE Sd (bias corrected)                                         | 9858  |
|                                                                                                                                           |                                  | Approximate Chi Square Value (0.05)                             | 2.258 |
| Adjusted Level of Significance                                                                                                            | 0.0267                           | Adjusted Chi Square Value                                       | 1.811 |
| Assuming Gamma Distribution                                                                                                               |                                  |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50)                                                                                                | 18697                            | 95% Adjusted Gamma UCL (use when n<50)                          | 23318 |
| Lognormal GOF Test                                                                                                                        |                                  |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.9                              | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842                            | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.235                            | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262                            | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |                                  |                                                                 |       |
| Lognormal Statistics                                                                                                                      |                                  |                                                                 |       |
| Minimum of Logged Data                                                                                                                    | 2.996                            | Mean of logged Data                                             | 7.111 |
| Maximum of Logged Data                                                                                                                    | 10                               | SD of logged Data                                               | 2.394 |
| Assuming Lognormal Distribution                                                                                                           |                                  |                                                                 |       |
| 95% H-UCL                                                                                                                                 | 3439155                          | 90% Chebyshev (MVUE) UCL                                        | 34731 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 45603                            | 97.5% Chebyshev (MVUE) UCL                                      | 60692 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 90332                            |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |                                  |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |                                  |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                      |                                  |                                                                 |       |
| 95% CLT UCL                                                                                                                               | 9801                             | 95% Jackknife UCL                                               | 10248 |
| 95% Standard Bootstrap UCL                                                                                                                | 9544                             | 95% Bootstrap-t UCL                                             | 12491 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 12981                            | 95% Percentile Bootstrap UCL                                    | 9929  |
| 95% BCA Bootstrap UCL                                                                                                                     | 10708                            |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 13017                            | 95% Chebyshev(Mean, Sd) UCL                                     | 16242 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 20718                            | 99% Chebyshev(Mean, Sd) UCL                                     | 29510 |
| Suggested UCL to Use                                                                                                                      |                                  |                                                                 |       |
| 95% Adjusted Gamma UCL 23318                                                                                                              |                                  |                                                                 |       |
| Recommended UCL exceeds the maximum observation                                                                                           |                                  |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |                                  |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |                                  |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |                                  |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |                                  |                                                                 |       |
| result (fluvial_cis-1,2-dichloroethylene_156-59-2)                                                                                        |                                  |                                                                 |       |
| General Statistics                                                                                                                        |                                  |                                                                 |       |
| Total Number of Observations                                                                                                              | 10                               | Number of Distinct Observations                                 | 10    |
|                                                                                                                                           |                                  | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                   | 135                              | Mean                                                            | 200.4 |
| Maximum                                                                                                                                   | 323                              | Median                                                          | 190   |
| SD                                                                                                                                        | 57.75                            | Std. Error of Mean                                              | 18.26 |
| Coefficient of Variation                                                                                                                  | 0.288                            | Skewness                                                        | 1     |
| Normal GOF Test                                                                                                                           |                                  |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.91                             | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842                            | Data appear Normal at 5% Significance Level                     |       |
| Lilliefors Test Statistic                                                                                                                 | 0.207                            | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262                            | Data appear Normal at 5% Significance Level                     |       |
| Data appear Normal at 5% Significance Level                                                                                               |                                  |                                                                 |       |
| Assuming Normal Distribution                                                                                                              |                                  |                                                                 |       |
| 95% Normal UCL                                                                                                                            | 95% UCLs (Adjusted for Skewness) |                                                                 |       |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                                 |                                   |       |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-----------------------------------|-------|-------|
| 95% Student's-t UCL                                                                                                                       |        | 233.9                                                           | 95% Adjusted-CLT UCL (Chen-1995)  |       | 236.6 |
|                                                                                                                                           |        |                                                                 | 95% Modified-t UCL (Johnson-1978) |       | 234.8 |
| Gamma GOF Test                                                                                                                            |        |                                                                 |                                   |       |       |
| A-D Test Statistic                                                                                                                        | 0.325  | Anderson-Darling Gamma GOF Test                                 |                                   |       |       |
| 5% A-D Critical Value                                                                                                                     | 0.725  | Detected data appear Gamma Distributed at 5% Significance Level |                                   |       |       |
| K-S Test Statistic                                                                                                                        | 0.207  | Kolmogorov-Smirnov Gamma GOF Test                               |                                   |       |       |
| 5% K-S Critical Value                                                                                                                     | 0.266  | Detected data appear Gamma Distributed at 5% Significance Level |                                   |       |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |                                   |       |       |
| Gamma Statistics                                                                                                                          |        |                                                                 |                                   |       |       |
| k hat (MLE)                                                                                                                               | 14.56  | k star (bias corrected MLE)                                     |                                   | 10.26 |       |
| Theta hat (MLE)                                                                                                                           | 13.76  | Theta star (bias corrected MLE)                                 |                                   | 19.53 |       |
| nu hat (MLE)                                                                                                                              | 291.2  | nu star (bias corrected)                                        |                                   | 205.2 |       |
| MLE Mean (bias corrected)                                                                                                                 | 200.4  | MLE Sd (bias corrected)                                         |                                   | 62.57 |       |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                             |                                   | 173   |       |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                                       |                                   | 167.9 |       |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |                                   |       |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 237.6  | 95% Adjusted Gamma UCL (use when n<50)                          |                                   | 244.9 |       |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |                                   |       |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.949  | Shapiro Wilk Lognormal GOF Test                                 |                                   |       |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Lognormal at 5% Significance Level                  |                                   |       |       |
| Lilliefors Test Statistic                                                                                                                 | 0.19   | Lilliefors Lognormal GOF Test                                   |                                   |       |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level                  |                                   |       |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                                 |                                   |       |       |
| Lognormal Statistics                                                                                                                      |        |                                                                 |                                   |       |       |
| Minimum of Logged Data                                                                                                                    | 4.905  | Mean of logged Data                                             |                                   | 5.266 |       |
| Maximum of Logged Data                                                                                                                    | 5.778  | SD of logged Data                                               |                                   | 0.274 |       |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |                                   |       |       |
| 95% H-UCL                                                                                                                                 | 240    | 90% Chebyshev (MVUE) UCL                                        |                                   | 252.4 |       |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 276.1  | 97.5% Chebyshev (MVUE) UCL                                      |                                   | 309   |       |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 373.5  |                                                                 |                                   |       |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |                                   |       |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |                                   |       |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |                                   |       |       |
| 95% CLT UCL                                                                                                                               | 230.4  | 95% Jackknife UCL                                               |                                   | 233.9 |       |
| 95% Standard Bootstrap UCL                                                                                                                | 228.9  | 95% Bootstrap-t UCL                                             |                                   | 243.4 |       |
| 95% Hall's Bootstrap UCL                                                                                                                  | 242.6  | 95% Percentile Bootstrap UCL                                    |                                   | 230.7 |       |
| 95% BCA Bootstrap UCL                                                                                                                     | 233.9  |                                                                 |                                   |       |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 255.2  | 95% Chebyshev(Mean, Sd) UCL                                     |                                   | 280   |       |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 314.5  | 99% Chebyshev(Mean, Sd) UCL                                     |                                   | 382.1 |       |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |                                   |       |       |
| 95% Student's-t UCL                                                                                                                       |        | 233.9                                                           |                                   |       |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |                                   |       |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |                                   |       |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |                                   |       |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |                                   |       |       |
| result (fluvial_methyl ethyl ketone (2-butanone)_78-93-3)                                                                                 |        |                                                                 |                                   |       |       |
| General Statistics                                                                                                                        |        |                                                                 |                                   |       |       |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                                 |                                   | 10    |       |
|                                                                                                                                           |        | Number of Missing Observations                                  |                                   | 0     |       |
| Minimum                                                                                                                                   | 3210   | Mean                                                            |                                   | 11211 |       |
| Maximum                                                                                                                                   | 20800  | Median                                                          |                                   | 10310 |       |
| SD                                                                                                                                        | 5128   | Std. Error of Mean                                              |                                   | 1622  |       |
| Coefficient of Variation                                                                                                                  | 0.457  | Skewness                                                        |                                   | 0.466 |       |
| Normal GOF Test                                                                                                                           |        |                                                                 |                                   |       |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.971  | Shapiro Wilk GOF Test                                           |                                   |       |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Normal at 5% Significance Level                     |                                   |       |       |
| Lilliefors Test Statistic                                                                                                                 | 0.137  | Lilliefors GOF Test                                             |                                   |       |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Normal at 5% Significance Level                     |                                   |       |       |
| Data appear Normal at 5% Significance Level                                                                                               |        |                                                                 |                                   |       |       |
| Assuming Normal Distribution                                                                                                              |        |                                                                 |                                   |       |       |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| 95% Normal UCL                                                                                                                            |        |                                                                 | 95% UCLs (Adjusted for Skewness)        |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-----------------------------------------|--|--|
| 95% Student's-t UCL 14183                                                                                                                 |        |                                                                 | 95% Adjusted-CLT UCL (Chen-1995) 14133  |  |  |
|                                                                                                                                           |        |                                                                 | 95% Modified-t UCL (Johnson-1978) 14223 |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Gamma GOF Test                                                                                                                            |        |                                                                 |                                         |  |  |
| A-D Test Statistic                                                                                                                        | 0.205  | Anderson-Darling Gamma GOF Test                                 |                                         |  |  |
| 5% A-D Critical Value                                                                                                                     | 0.729  | Detected data appear Gamma Distributed at 5% Significance Level |                                         |  |  |
| K-S Test Statistic                                                                                                                        | 0.157  | Kolmogorov-Smirnov Gamma GOF Test                               |                                         |  |  |
| 5% K-S Critical Value                                                                                                                     | 0.268  | Detected data appear Gamma Distributed at 5% Significance Level |                                         |  |  |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Gamma Statistics                                                                                                                          |        |                                                                 |                                         |  |  |
| k hat (MLE)                                                                                                                               | 4.723  | k star (bias corrected MLE) 3.373                               |                                         |  |  |
| Theta hat (MLE)                                                                                                                           | 2374   | Theta star (bias corrected MLE) 3324                            |                                         |  |  |
| nu hat (MLE)                                                                                                                              | 94.46  | nu star (bias corrected) 67.45                                  |                                         |  |  |
| MLE Mean (bias corrected)                                                                                                                 | 11211  | MLE Sd (bias corrected) 6105                                    |                                         |  |  |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05) 49.55                       |                                         |  |  |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value 46.9                                  |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |                                         |  |  |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 15261  | 95% Adjusted Gamma UCL (use when n<50) 16126                    |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |                                         |  |  |
| Shapiro Wilk Test Statistic                                                                                                               | 0.939  | Shapiro Wilk Lognormal GOF Test                                 |                                         |  |  |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Lognormal at 5% Significance Level                  |                                         |  |  |
| Lilliefors Test Statistic                                                                                                                 | 0.191  | Lilliefors Lognormal GOF Test                                   |                                         |  |  |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level                  |                                         |  |  |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Lognormal Statistics                                                                                                                      |        |                                                                 |                                         |  |  |
| Minimum of Logged Data                                                                                                                    | 8.074  | Mean of logged Data 9.215                                       |                                         |  |  |
| Maximum of Logged Data                                                                                                                    | 9.943  | SD of logged Data 0.525                                         |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |                                         |  |  |
| 95% H-UCL                                                                                                                                 | 17120  | 90% Chebyshev (MVUE) UCL 17132                                  |                                         |  |  |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 19746  | 97.5% Chebyshev (MVUE) UCL 23374                                |                                         |  |  |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 30502  |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |                                         |  |  |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |                                         |  |  |
| 95% CLT UCL                                                                                                                               | 13878  | 95% Jackknife UCL 14183                                         |                                         |  |  |
| 95% Standard Bootstrap UCL                                                                                                                | 13696  | 95% Bootstrap-t UCL 14674                                       |                                         |  |  |
| 95% Hall's Bootstrap UCL                                                                                                                  | 14720  | 95% Percentile Bootstrap UCL 13934                              |                                         |  |  |
| 95% BCA Bootstrap UCL                                                                                                                     | 13961  |                                                                 |                                         |  |  |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 16076  | 95% Chebyshev(Mean, Sd) UCL 18279                               |                                         |  |  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 21337  | 99% Chebyshev(Mean, Sd) UCL 27345                               |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |                                         |  |  |
| 95% Student's-t UCL 14183                                                                                                                 |        |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |                                         |  |  |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |                                         |  |  |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |                                         |  |  |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| result (fluvial_methyl tert-butyl ether_1634-04-4)                                                                                        |        |                                                                 |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| General Statistics                                                                                                                        |        |                                                                 |                                         |  |  |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations 10                              |                                         |  |  |
|                                                                                                                                           |        | Number of Missing Observations 0                                |                                         |  |  |
| Minimum                                                                                                                                   | 41     | Mean 52.64                                                      |                                         |  |  |
| Maximum                                                                                                                                   | 78.2   | Median 47.6                                                     |                                         |  |  |
| SD                                                                                                                                        | 12.73  | Std. Error of Mean 4.024                                        |                                         |  |  |
| Coefficient of Variation                                                                                                                  | 0.242  | Skewness 1.168                                                  |                                         |  |  |
|                                                                                                                                           |        |                                                                 |                                         |  |  |
| Normal GOF Test                                                                                                                           |        |                                                                 |                                         |  |  |
| Shapiro Wilk Test Statistic                                                                                                               | 0.835  | Shapiro Wilk GOF Test                                           |                                         |  |  |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Normal at 5% Significance Level                        |                                         |  |  |
| Lilliefors Test Statistic                                                                                                                 | 0.242  | Lilliefors GOF Test                                             |                                         |  |  |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Normal at 5% Significance Level                     |                                         |  |  |
| Data appear Approximate Normal at 5% Significance Level                                                                                   |        |                                                                 |                                         |  |  |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Assuming Normal Distribution                                                                                                              |        |                                                                 |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                       | 60.02  | 95% Adjusted-CLT UCL (Chen-1995)                                | 60.85 |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                               | 60.27 |
| Gamma GOF Test                                                                                                                            |        |                                                                 |       |
| A-D Test Statistic                                                                                                                        | 0.699  | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                     | 0.725  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.252  | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                     | 0.266  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |       |
| Gamma Statistics                                                                                                                          |        |                                                                 |       |
| k hat (MLE)                                                                                                                               | 21.24  | k star (bias corrected MLE)                                     | 14.94 |
| Theta hat (MLE)                                                                                                                           | 2.478  | Theta star (bias corrected MLE)                                 | 3.524 |
| nu hat (MLE)                                                                                                                              | 424.8  | nu star (bias corrected)                                        | 298.7 |
| MLE Mean (bias corrected)                                                                                                                 | 52.64  | MLE Sd (bias corrected)                                         | 13.62 |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                             | 259.7 |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                                       | 253.3 |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 60.55  | 95% Adjusted Gamma UCL (use when n<50)                          | 62.07 |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.864  | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.24   | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                                 |       |
| Lognormal Statistics                                                                                                                      |        |                                                                 |       |
| Minimum of Logged Data                                                                                                                    | 3.714  | Mean of logged Data                                             | 3.94  |
| Maximum of Logged Data                                                                                                                    | 4.359  | SD of logged Data                                               | 0.224 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |       |
| 95% H-UCL                                                                                                                                 | 60.75  | 90% Chebyshev (MVUE) UCL                                        | 63.78 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 68.86  | 97.5% Chebyshev (MVUE) UCL                                      | 75.9  |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 89.74  |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |       |
| 95% CLT UCL                                                                                                                               | 59.26  | 95% Jackknife UCL                                               | 60.02 |
| 95% Standard Bootstrap UCL                                                                                                                | 58.84  | 95% Bootstrap-t UCL                                             | 63.87 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 61.82  | 95% Percentile Bootstrap UCL                                    | 58.98 |
| 95% BCA Bootstrap UCL                                                                                                                     | 60.64  |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 64.71  | 95% Chebyshev(Mean, Sd) UCL                                     | 70.18 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 77.77  | 99% Chebyshev(Mean, Sd) UCL                                     | 92.68 |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |       |
| 95% Student's-t UCL                                                                                                                       | 60.02  |                                                                 |       |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |        |                                                                 |       |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |        |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |       |
| result (fluvial_methylene chloride_75-09-2)                                                                                               |        |                                                                 |       |
| General Statistics                                                                                                                        |        |                                                                 |       |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                                 | 10    |
|                                                                                                                                           |        | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                   | 27.5   | Mean                                                            | 71.17 |
| Maximum                                                                                                                                   | 177    | Median                                                          | 61.65 |
| SD                                                                                                                                        | 46.03  | Std. Error of Mean                                              | 14.55 |
| Coefficient of Variation                                                                                                                  | 0.647  | Skewness                                                        | 1.466 |
| Normal GOF Test                                                                                                                           |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.863  | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Normal at 5% Significance Level                     |       |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |  |        |                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|--------|-----------------------------------------------------------------|--------|
| Lilliefors Test Statistic                                                                                                                 |  | 0.197  | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                              |  | 0.262  | Data appear Normal at 5% Significance Level                     |        |
| Data appear Normal at 5% Significance Level                                                                                               |  |        |                                                                 |        |
| Assuming Normal Distribution                                                                                                              |  |        |                                                                 |        |
| 95% Normal UCL                                                                                                                            |  |        | 95% UCLs (Adjusted for Skewness)                                |        |
| 95% Student's-t UCL                                                                                                                       |  | 97.85  | 95% Adjusted-CLT UCL (Chen-1995)                                | 102.3  |
|                                                                                                                                           |  |        | 95% Modified-t UCL (Johnson-1978)                               | 98.98  |
| Gamma GOF Test                                                                                                                            |  |        |                                                                 |        |
| A-D Test Statistic                                                                                                                        |  | 0.26   | Anderson-Darling Gamma GOF Test                                 |        |
| 5% A-D Critical Value                                                                                                                     |  | 0.732  | Detected data appear Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        |  | 0.151  | Kolmogorov-Smirnov Gamma GOF Test                               |        |
| 5% K-S Critical Value                                                                                                                     |  | 0.268  | Detected data appear Gamma Distributed at 5% Significance Level |        |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |  |        |                                                                 |        |
| Gamma Statistics                                                                                                                          |  |        |                                                                 |        |
| k hat (MLE)                                                                                                                               |  | 3.133  | k star (bias corrected MLE)                                     | 2.26   |
| Theta hat (MLE)                                                                                                                           |  | 22.71  | Theta star (bias corrected MLE)                                 | 31.49  |
| nu hat (MLE)                                                                                                                              |  | 62.66  | nu star (bias corrected)                                        | 45.2   |
| MLE Mean (bias corrected)                                                                                                                 |  | 71.17  | MLE Sd (bias corrected)                                         | 47.34  |
|                                                                                                                                           |  |        | Approximate Chi Square Value (0.05)                             | 30.78  |
| Adjusted Level of Significance                                                                                                            |  | 0.0267 | Adjusted Chi Square Value                                       | 28.72  |
| Assuming Gamma Distribution                                                                                                               |  |        |                                                                 |        |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               |  | 104.5  | 95% Adjusted Gamma UCL (use when n<50)                          | 112    |
| Lognormal GOF Test                                                                                                                        |  |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               |  | 0.959  | Shapiro Wilk Lognormal GOF Test                                 |        |
| 5% Shapiro Wilk Critical Value                                                                                                            |  | 0.842  | Data appear Lognormal at 5% Significance Level                  |        |
| Lilliefors Test Statistic                                                                                                                 |  | 0.15   | Lilliefors Lognormal GOF Test                                   |        |
| 5% Lilliefors Critical Value                                                                                                              |  | 0.262  | Data appear Lognormal at 5% Significance Level                  |        |
| Data appear Lognormal at 5% Significance Level                                                                                            |  |        |                                                                 |        |
| Lognormal Statistics                                                                                                                      |  |        |                                                                 |        |
| Minimum of Logged Data                                                                                                                    |  | 3.314  | Mean of logged Data                                             | 4.097  |
| Maximum of Logged Data                                                                                                                    |  | 5.176  | SD of logged Data                                               | 0.603  |
| Assuming Lognormal Distribution                                                                                                           |  |        |                                                                 |        |
| 95% H-UCL                                                                                                                                 |  | 116.2  | 90% Chebyshev (MVUE) UCL                                        | 112.1  |
| 95% Chebyshev (MVUE) UCL                                                                                                                  |  | 130.8  | 97.5% Chebyshev (MVUE) UCL                                      | 156.9  |
| 99% Chebyshev (MVUE) UCL                                                                                                                  |  | 208    |                                                                 |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |  |        |                                                                 |        |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |  |        |                                                                 |        |
| Nonparametric Distribution Free UCLs                                                                                                      |  |        |                                                                 |        |
| 95% CLT UCL                                                                                                                               |  | 95.11  | 95% Jackknife UCL                                               | 97.85  |
| 95% Standard Bootstrap UCL                                                                                                                |  | 93.83  | 95% Bootstrap-t UCL                                             | 114.1  |
| 95% Hall's Bootstrap UCL                                                                                                                  |  | 204.7  | 95% Percentile Bootstrap UCL                                    | 95.88  |
| 95% BCA Bootstrap UCL                                                                                                                     |  | 102.3  |                                                                 |        |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               |  | 114.8  | 95% Chebyshev(Mean, Sd) UCL                                     | 134.6  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             |  | 162.1  | 99% Chebyshev(Mean, Sd) UCL                                     | 216    |
| Suggested UCL to Use                                                                                                                      |  |        |                                                                 |        |
| 95% Student's-t UCL                                                                                                                       |  | 97.85  |                                                                 |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |  |        |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |  |        |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |  |        |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |  |        |                                                                 |        |
| result (fluvial_tetrachloroethylene_127-18-4)                                                                                             |  |        |                                                                 |        |
| General Statistics                                                                                                                        |  |        |                                                                 |        |
| Total Number of Observations                                                                                                              |  | 10     | Number of Distinct Observations                                 | 9      |
|                                                                                                                                           |  |        | Number of Missing Observations                                  | 0      |
| Minimum                                                                                                                                   |  | 155    | Mean                                                            | 240.3  |
| Maximum                                                                                                                                   |  | 300    | Median                                                          | 249    |
| SD                                                                                                                                        |  | 54.34  | Std. Error of Mean                                              | 17.18  |
| Coefficient of Variation                                                                                                                  |  | 0.226  | Skewness                                                        | -0.493 |
| Normal GOF Test                                                                                                                           |  |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                               |  | 0.893  | Shapiro Wilk GOF Test                                           |        |



TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                               |        |                                                                 |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                | 0.842  | Data appear Normal at 5% Significance Level                     |       |
| Lilliefors Test Statistic                                                                                                                                                                                     | 0.162  | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                                                                                                  | 0.262  | Data appear Normal at 5% Significance Level                     |       |
| Data appear Normal at 5% Significance Level                                                                                                                                                                   |        |                                                                 |       |
| Assuming Normal Distribution                                                                                                                                                                                  |        |                                                                 |       |
| 95% Normal UCL                                                                                                                                                                                                |        | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 271.8  | 95% Adjusted-CLT UCL (Chen-1995)                                | 265.7 |
|                                                                                                                                                                                                               |        | 95% Modified-t UCL (Johnson-1978)                               | 271.4 |
| Gamma GOF Test                                                                                                                                                                                                |        |                                                                 |       |
| A-D Test Statistic                                                                                                                                                                                            | 0.535  | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                                                                                         | 0.725  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                                                                                            | 0.185  | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                                                                                         | 0.266  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                                                                                               |        |                                                                 |       |
| Gamma Statistics                                                                                                                                                                                              |        |                                                                 |       |
| k hat (MLE)                                                                                                                                                                                                   | 19.8   | k star (bias corrected MLE)                                     | 13.93 |
| Theta hat (MLE)                                                                                                                                                                                               | 12.14  | Theta star (bias corrected MLE)                                 | 17.25 |
| nu hat (MLE)                                                                                                                                                                                                  | 396    | nu star (bias corrected)                                        | 278.5 |
| MLE Mean (bias corrected)                                                                                                                                                                                     | 240.3  | MLE Sd (bias corrected)                                         | 64.39 |
|                                                                                                                                                                                                               |        | Approximate Chi Square Value (0.05)                             | 240.9 |
| Adjusted Level of Significance                                                                                                                                                                                | 0.0267 | Adjusted Chi Square Value                                       | 234.8 |
| Assuming Gamma Distribution                                                                                                                                                                                   |        |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                                   | 277.9  | 95% Adjusted Gamma UCL (use when n<50)                          | 285.1 |
| Lognormal GOF Test                                                                                                                                                                                            |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                                   | 0.877  | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                | 0.842  | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                                                                                     | 0.182  | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                                                                                                  | 0.262  | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                                |        |                                                                 |       |
| Lognormal Statistics                                                                                                                                                                                          |        |                                                                 |       |
| Minimum of Logged Data                                                                                                                                                                                        | 5.043  | Mean of logged Data                                             | 5.456 |
| Maximum of Logged Data                                                                                                                                                                                        | 5.704  | SD of logged Data                                               | 0.244 |
| Assuming Lognormal Distribution                                                                                                                                                                               |        |                                                                 |       |
| 95% H-UCL                                                                                                                                                                                                     | 282.2  | 90% Chebyshev (MVUE) UCL                                        | 296.6 |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 321.9  | 97.5% Chebyshev (MVUE) UCL                                      | 357.1 |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 426.2  |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                                |        |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                                     |        |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                                          |        |                                                                 |       |
| 95% CLT UCL                                                                                                                                                                                                   | 268.6  | 95% Jackknife UCL                                               | 271.8 |
| 95% Standard Bootstrap UCL                                                                                                                                                                                    | 266.8  | 95% Bootstrap-t UCL                                             | 269.4 |
| 95% Hall's Bootstrap UCL                                                                                                                                                                                      | 264.4  | 95% Percentile Bootstrap UCL                                    | 266.4 |
| 95% BCA Bootstrap UCL                                                                                                                                                                                         | 265.2  |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                   | 291.9  | 95% Chebyshev(Mean, Sd) UCL                                     | 315.2 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                 | 347.6  | 99% Chebyshev(Mean, Sd) UCL                                     | 411.3 |
| Suggested UCL to Use                                                                                                                                                                                          |        |                                                                 |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 271.8  |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |        |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |        |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |        |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |        |                                                                 |       |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |        |                                                                 |       |
| result (fluvial_toluene_108-88-3)                                                                                                                                                                             |        |                                                                 |       |
| General Statistics                                                                                                                                                                                            |        |                                                                 |       |
| Total Number of Observations                                                                                                                                                                                  | 10     | Number of Distinct Observations                                 | 10    |
|                                                                                                                                                                                                               |        | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                                                                                       | 8.43   | Mean                                                            | 34.75 |
| Maximum                                                                                                                                                                                                       | 149    | Median                                                          | 22.75 |
| SD                                                                                                                                                                                                            | 41.18  | Std. Error of Mean                                              | 13.02 |

TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                     |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------|-------|
| Coefficient of Variation                                                                                                                  | 1.185  | Skewness                                            | 2.883 |
| Normal GOF Test                                                                                                                           |        |                                                     |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.572  | Shapiro Wilk GOF Test                               |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Normal at 5% Significance Level            |       |
| Lilliefors Test Statistic                                                                                                                 | 0.361  | Lilliefors GOF Test                                 |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data Not Normal at 5% Significance Level            |       |
| Data Not Normal at 5% Significance Level                                                                                                  |        |                                                     |       |
| Assuming Normal Distribution                                                                                                              |        |                                                     |       |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                    |       |
| 95% Student's-t UCL                                                                                                                       | 58.62  | 95% Adjusted-CLT UCL (Chen-1995)                    | 68.86 |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                   | 60.6  |
| Gamma GOF Test                                                                                                                            |        |                                                     |       |
| A-D Test Statistic                                                                                                                        | 0.958  | Anderson-Darling Gamma GOF Test                     |       |
| 5% A-D Critical Value                                                                                                                     | 0.738  | Data Not Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.291  | Kolmogorov-Smirnov Gamma GOF Test                   |       |
| 5% K-S Critical Value                                                                                                                     | 0.271  | Data Not Gamma Distributed at 5% Significance Level |       |
| Data Not Gamma Distributed at 5% Significance Level                                                                                       |        |                                                     |       |
| Gamma Statistics                                                                                                                          |        |                                                     |       |
| k hat (MLE)                                                                                                                               | 1.602  | k star (bias corrected MLE)                         | 1.188 |
| Theta hat (MLE)                                                                                                                           | 21.69  | Theta star (bias corrected MLE)                     | 29.25 |
| nu hat (MLE)                                                                                                                              | 32.04  | nu star (bias corrected)                            | 23.76 |
| MLE Mean (bias corrected)                                                                                                                 | 34.75  | MLE Sd (bias corrected)                             | 31.88 |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                 | 13.67 |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                           | 12.36 |
| Assuming Gamma Distribution                                                                                                               |        |                                                     |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 60.42  | 95% Adjusted Gamma UCL (use when n<50)              | 66.83 |
| Lognormal GOF Test                                                                                                                        |        |                                                     |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.889  | Shapiro Wilk Lognormal GOF Test                     |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Lognormal at 5% Significance Level      |       |
| Lilliefors Test Statistic                                                                                                                 | 0.227  | Lilliefors Lognormal GOF Test                       |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level      |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                     |       |
| Lognormal Statistics                                                                                                                      |        |                                                     |       |
| Minimum of Logged Data                                                                                                                    | 2.132  | Mean of logged Data                                 | 3.205 |
| Maximum of Logged Data                                                                                                                    | 5.004  | SD of logged Data                                   | 0.766 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                     |       |
| 95% H-UCL                                                                                                                                 | 64.98  | 90% Chebyshev (MVUE) UCL                            | 55.9  |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 66.78  | 97.5% Chebyshev (MVUE) UCL                          | 81.86 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 111.5  |                                                     |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                     |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                     |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                     |       |
| 95% CLT UCL                                                                                                                               | 56.17  | 95% Jackknife UCL                                   | 58.62 |
| 95% Standard Bootstrap UCL                                                                                                                | 55.3   | 95% Bootstrap-t UCL                                 | 143.6 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 159.4  | 95% Percentile Bootstrap UCL                        | 59.28 |
| 95% BCA Bootstrap UCL                                                                                                                     | 72.08  |                                                     |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 73.82  | 95% Chebyshev(Mean, Sd) UCL                         | 91.51 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 116.1  | 99% Chebyshev(Mean, Sd) UCL                         | 164.3 |
| Suggested UCL to Use                                                                                                                      |        |                                                     |       |
| 95% H-UCL                                                                                                                                 | 64.98  |                                                     |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                     |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                     |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                     |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                     |       |
| ProUCL computes and outputs H-statistic based UCLs for historical reasons only.                                                           |        |                                                     |       |
| H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.                    |        |                                                     |       |
| It is therefore recommended to avoid the use of H-statistic based 95% UCLs.                                                               |        |                                                     |       |
| Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.                |        |                                                     |       |
| result (fluvial_trichloroethylene_79-01-6)                                                                                                |        |                                                     |       |



TABLE D.11  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| General Statistics                                                                                                                        |        |                                                                 |       |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|--|--|
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                                 | 10    |  |  |
|                                                                                                                                           |        | Number of Missing Observations                                  | 0     |  |  |
| Minimum                                                                                                                                   | 88.7   | Mean                                                            | 157.8 |  |  |
| Maximum                                                                                                                                   | 286    | Median                                                          | 158.5 |  |  |
| SD                                                                                                                                        | 59.33  | Std. Error of Mean                                              | 18.76 |  |  |
| Coefficient of Variation                                                                                                                  | 0.376  | Skewness                                                        | 1.008 |  |  |
| Normal GOF Test                                                                                                                           |        |                                                                 |       |  |  |
| Shapiro Wilk Test Statistic                                                                                                               | 0.923  | Shapiro Wilk GOF Test                                           |       |  |  |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Normal at 5% Significance Level                     |       |  |  |
| Lilliefors Test Statistic                                                                                                                 | 0.152  | Lilliefors GOF Test                                             |       |  |  |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Normal at 5% Significance Level                     |       |  |  |
| Data appear Normal at 5% Significance Level                                                                                               |        |                                                                 |       |  |  |
| Assuming Normal Distribution                                                                                                              |        |                                                                 |       |  |  |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                                |       |  |  |
| 95% Student's-t UCL                                                                                                                       | 192.2  | 95% Adjusted-CLT UCL (Chen-1995)                                | 195   |  |  |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                               | 193.2 |  |  |
| Gamma GOF Test                                                                                                                            |        |                                                                 |       |  |  |
| A-D Test Statistic                                                                                                                        | 0.221  | Anderson-Darling Gamma GOF Test                                 |       |  |  |
| 5% A-D Critical Value                                                                                                                     | 0.726  | Detected data appear Gamma Distributed at 5% Significance Level |       |  |  |
| K-S Test Statistic                                                                                                                        | 0.125  | Kolmogorov-Smirnov Gamma GOF Test                               |       |  |  |
| 5% K-S Critical Value                                                                                                                     | 0.267  | Detected data appear Gamma Distributed at 5% Significance Level |       |  |  |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |       |  |  |
| Gamma Statistics                                                                                                                          |        |                                                                 |       |  |  |
| k hat (MLE)                                                                                                                               | 8.446  | k star (bias corrected MLE)                                     | 5.979 |  |  |
| Theta hat (MLE)                                                                                                                           | 18.68  | Theta star (bias corrected MLE)                                 | 26.39 |  |  |
| nu hat (MLE)                                                                                                                              | 168.9  | nu star (bias corrected)                                        | 119.6 |  |  |
| MLE Mean (bias corrected)                                                                                                                 | 157.8  | MLE Sd (bias corrected)                                         | 64.52 |  |  |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                             | 95.32 |  |  |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                                       | 91.56 |  |  |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |       |  |  |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 197.9  | 95% Adjusted Gamma UCL (use when n<50)                          | 206   |  |  |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |       |  |  |
| Shapiro Wilk Test Statistic                                                                                                               | 0.967  | Shapiro Wilk Lognormal GOF Test                                 |       |  |  |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Lognormal at 5% Significance Level                  |       |  |  |
| Lilliefors Test Statistic                                                                                                                 | 0.14   | Lilliefors Lognormal GOF Test                                   |       |  |  |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level                  |       |  |  |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                                 |       |  |  |
| Lognormal Statistics                                                                                                                      |        |                                                                 |       |  |  |
| Minimum of Logged Data                                                                                                                    | 4.485  | Mean of logged Data                                             | 5.001 |  |  |
| Maximum of Logged Data                                                                                                                    | 5.656  | SD of logged Data                                               | 0.364 |  |  |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |       |  |  |
| 95% H-UCL                                                                                                                                 | 203.5  | 90% Chebyshev (MVUE) UCL                                        | 212.6 |  |  |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 237.6  | 97.5% Chebyshev (MVUE) UCL                                      | 272.2 |  |  |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 340.1  |                                                                 |       |  |  |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |       |  |  |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |       |  |  |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |       |  |  |
| 95% CLT UCL                                                                                                                               | 188.6  | 95% Jackknife UCL                                               | 192.2 |  |  |
| 95% Standard Bootstrap UCL                                                                                                                | 187    | 95% Bootstrap-t UCL                                             | 201.6 |  |  |
| 95% Hall's Bootstrap UCL                                                                                                                  | 210.3  | 95% Percentile Bootstrap UCL                                    | 187.9 |  |  |
| 95% BCA Bootstrap UCL                                                                                                                     | 191.2  |                                                                 |       |  |  |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 214.1  | 95% Chebyshev(Mean, Sd) UCL                                     | 239.5 |  |  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 274.9  | 99% Chebyshev(Mean, Sd) UCL                                     | 344.4 |  |  |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |       |  |  |
| 95% Student's-t UCL                                                                                                                       | 192.2  |                                                                 |       |  |  |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |       |  |  |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |       |  |  |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |       |  |  |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |       |  |  |

result (fluvial\_vinyl chloride\_75-01-4)

TABLE D.11

PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - FLUVIAL AQUIFER

HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT

MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| General Statistics                                                                                                                        |        |                                                                 |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                                 | 9     |
|                                                                                                                                           |        | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                   | 16.8   | Mean                                                            | 73.32 |
| Maximum                                                                                                                                   | 188    | Median                                                          | 51.5  |
| SD                                                                                                                                        | 64.03  | Std. Error of Mean                                              | 20.25 |
| Coefficient of Variation                                                                                                                  | 0.873  | Skewness                                                        | 1.271 |
| Normal GOF Test                                                                                                                           |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.79   | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Normal at 5% Significance Level                        |       |
| Lilliefors Test Statistic                                                                                                                 | 0.278  | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data Not Normal at 5% Significance Level                        |       |
| Data Not Normal at 5% Significance Level                                                                                                  |        |                                                                 |       |
| Assuming Normal Distribution                                                                                                              |        |                                                                 |       |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                       | 110.4  | 95% Adjusted-CLT UCL (Chen-1995)                                | 115.3 |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                               | 111.8 |
| Gamma GOF Test                                                                                                                            |        |                                                                 |       |
| A-D Test Statistic                                                                                                                        | 0.438  | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                     | 0.738  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.19   | Kolmogorov-Smimov Gamma GOF Test                                |       |
| 5% K-S Critical Value                                                                                                                     | 0.271  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                           |        |                                                                 |       |
| Gamma Statistics                                                                                                                          |        |                                                                 |       |
| k hat (MLE)                                                                                                                               | 1.694  | k star (bias corrected MLE)                                     | 1.253 |
| Theta hat (MLE)                                                                                                                           | 43.27  | Theta star (bias corrected MLE)                                 | 58.53 |
| nu hat (MLE)                                                                                                                              | 33.89  | nu star (bias corrected)                                        | 25.06 |
| MLE Mean (bias corrected)                                                                                                                 | 73.32  | MLE Sd (bias corrected)                                         | 65.51 |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                             | 14.65 |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                                       | 13.29 |
| Assuming Gamma Distribution                                                                                                               |        |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50)                                                                                                | 125.4  | 95% Adjusted Gamma UCL (use when n<50)                          | 138.2 |
| Lognormal GOF Test                                                                                                                        |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.938  | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                 | 0.136  | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                                 |       |
| Lognormal Statistics                                                                                                                      |        |                                                                 |       |
| Minimum of Logged Data                                                                                                                    | 2.821  | Mean of logged Data                                             | 3.972 |
| Maximum of Logged Data                                                                                                                    | 5.236  | SD of logged Data                                               | 0.843 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                                 |       |
| 95% H-UCL                                                                                                                                 | 165.7  | 90% Chebyshev (MVUE) UCL                                        | 132.6 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 159.9  | 97.5% Chebyshev (MVUE) UCL                                      | 197.7 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 272.1  |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                                 |       |
| 95% CLT UCL                                                                                                                               | 106.6  | 95% Jackknife UCL                                               | 110.4 |
| 95% Standard Bootstrap UCL                                                                                                                | 105.2  | 95% Bootstrap-t UCL                                             | 148.3 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 177    | 95% Percentile Bootstrap UCL                                    | 108.2 |
| 95% BCA Bootstrap UCL                                                                                                                     | 112.5  |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 134.1  | 95% Chebyshev(Mean, Sd) UCL                                     | 161.6 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 199.8  | 99% Chebyshev(Mean, Sd) UCL                                     | 274.8 |
| Suggested UCL to Use                                                                                                                      |        |                                                                 |       |
| 95% Adjusted Gamma UCL                                                                                                                    | 138.2  |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                                 |       |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| UCL Statistics for Data Sets with Non-Detects |  |                                |  |  |  |  |  |  |  |
|-----------------------------------------------|--|--------------------------------|--|--|--|--|--|--|--|
| User Selected Options                         |  |                                |  |  |  |  |  |  |  |
| Date/Time of Computation                      |  | ProUCL 5.18/18/2017 1:06:05 PM |  |  |  |  |  |  |  |
| From File                                     |  | WorkSheet.xls                  |  |  |  |  |  |  |  |
| Full Precision                                |  | OFF                            |  |  |  |  |  |  |  |
| Confidence Coefficient                        |  | 95%                            |  |  |  |  |  |  |  |
| Number of Bootstrap Operations                |  | 2000                           |  |  |  |  |  |  |  |

result (/uc\_1,1,2,2-tetrachloroethane\_79-34-5)

| General Statistics           |  |        |  |                                 |  |        |  |  |  |
|------------------------------|--|--------|--|---------------------------------|--|--------|--|--|--|
| Total Number of Observations |  | 6      |  | Number of Distinct Observations |  | 6      |  |  |  |
|                              |  |        |  | Number of Missing Observations  |  | 0      |  |  |  |
| Minimum                      |  | 0.283  |  | Mean                            |  | 0.344  |  |  |  |
| Maximum                      |  | 0.538  |  | Median                          |  | 0.31   |  |  |  |
| SD                           |  | 0.0962 |  | Std. Error of Mean              |  | 0.0393 |  |  |  |
| Coefficient of Variation     |  | 0.28   |  | Skewness                        |  | 2.309  |  |  |  |

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

| Normal GOF Test                |  |       |  |                                          |  |  |  |  |  |
|--------------------------------|--|-------|--|------------------------------------------|--|--|--|--|--|
| Shapiro Wilk Test Statistic    |  | 0.65  |  | Shapiro Wilk GOF Test                    |  |  |  |  |  |
| 5% Shapiro Wilk Critical Value |  | 0.788 |  | Data Not Normal at 5% Significance Level |  |  |  |  |  |
| Lilliefors Test Statistic      |  | 0.408 |  | Lilliefors GOF Test                      |  |  |  |  |  |
| 5% Lilliefors Critical Value   |  | 0.325 |  | Data Not Normal at 5% Significance Level |  |  |  |  |  |

Data Not Normal at 5% Significance Level

| Assuming Normal Distribution |  |       |  |                                   |  |       |  |  |  |
|------------------------------|--|-------|--|-----------------------------------|--|-------|--|--|--|
| 95% Normal UCL               |  |       |  | 95% UCLs (Adjusted for Skewness)  |  |       |  |  |  |
| 95% Student's-t UCL          |  | 0.423 |  | 95% Adjusted-CLT UCL (Chen-1995)  |  | 0.448 |  |  |  |
|                              |  |       |  | 95% Modified-t UCL (Johnson-1978) |  | 0.429 |  |  |  |

| Gamma GOF Test        |  |       |  |                                                     |  |  |  |  |  |
|-----------------------|--|-------|--|-----------------------------------------------------|--|--|--|--|--|
| A-D Test Statistic    |  | 1.02  |  | Anderson-Darling Gamma GOF Test                     |  |  |  |  |  |
| 5% A-D Critical Value |  | 0.697 |  | Data Not Gamma Distributed at 5% Significance Level |  |  |  |  |  |
| K-S Test Statistic    |  | 0.397 |  | Kolmogorov-Smimov Gamma GOF Test                    |  |  |  |  |  |
| 5% K-S Critical Value |  | 0.332 |  | Data Not Gamma Distributed at 5% Significance Level |  |  |  |  |  |

Data Not Gamma Distributed at 5% Significance Level

| Gamma Statistics               |  |        |  |                                     |  |        |  |  |  |
|--------------------------------|--|--------|--|-------------------------------------|--|--------|--|--|--|
| k hat (MLE)                    |  | 19.25  |  | k star (bias corrected MLE)         |  | 9.738  |  |  |  |
| Theta hat (MLE)                |  | 0.0179 |  | Theta star (bias corrected MLE)     |  | 0.0353 |  |  |  |
| nu hat (MLE)                   |  | 231.1  |  | nu star (bias corrected)            |  | 116.9  |  |  |  |
| MLE Mean (bias corrected)      |  | 0.344  |  | MLE Sd (bias corrected)             |  | 0.11   |  |  |  |
|                                |  |        |  | Approximate Chi Square Value (0.05) |  | 92.9   |  |  |  |
| Adjusted Level of Significance |  | 0.0122 |  | Adjusted Chi Square Value           |  | 85.19  |  |  |  |

| Assuming Gamma Distribution                 |  |       |  |                                        |  |       |  |  |  |
|---------------------------------------------|--|-------|--|----------------------------------------|--|-------|--|--|--|
| 95% Approximate Gamma UCL (use when n>=50)) |  | 0.433 |  | 95% Adjusted Gamma UCL (use when n<50) |  | 0.472 |  |  |  |

| Lognormal GOF Test             |  |       |  |                                             |  |  |  |  |  |
|--------------------------------|--|-------|--|---------------------------------------------|--|--|--|--|--|
| Shapiro Wilk Test Statistic    |  | 0.699 |  | Shapiro Wilk Lognormal GOF Test             |  |  |  |  |  |
| 5% Shapiro Wilk Critical Value |  | 0.788 |  | Data Not Lognormal at 5% Significance Level |  |  |  |  |  |
| Lilliefors Test Statistic      |  | 0.38  |  | Lilliefors Lognormal GOF Test               |  |  |  |  |  |
| 5% Lilliefors Critical Value   |  | 0.325 |  | Data Not Lognormal at 5% Significance Level |  |  |  |  |  |

Data Not Lognormal at 5% Significance Level

| Lognormal Statistics   |  |        |  |                     |  |        |  |  |  |
|------------------------|--|--------|--|---------------------|--|--------|--|--|--|
| Minimum of Logged Data |  | -1.262 |  | Mean of logged Data |  | -1.093 |  |  |  |
| Maximum of Logged Data |  | -0.62  |  | SD of logged Data   |  | 0.237  |  |  |  |

| Assuming Lognormal Distribution |  |       |  |                            |  |       |  |  |  |
|---------------------------------|--|-------|--|----------------------------|--|-------|--|--|--|
| 95% H-UCL                       |  | 0.432 |  | 90% Chebyshev (MVUE) UCL   |  | 0.443 |  |  |  |
| 95% Chebyshev (MVUE) UCL        |  | 0.488 |  | 97.5% Chebyshev (MVUE) UCL |  | 0.551 |  |  |  |
| 99% Chebyshev (MVUE) UCL        |  | 0.674 |  |                            |  |       |  |  |  |

| Nonparametric Distribution Free UCL Statistics       |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Data do not follow a Discernible Distribution (0.05) |  |  |  |  |  |  |  |  |  |

| Nonparametric Distribution Free UCLs |  |       |  |                   |  |       |  |  |  |
|--------------------------------------|--|-------|--|-------------------|--|-------|--|--|--|
| 95% CLT UCL                          |  | 0.409 |  | 95% Jackknife UCL |  | 0.423 |  |  |  |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                  |        |                                                                 |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|--------|
| 95% Standard Bootstrap UCL                                                                                                                                                                       | 0.404  | 95% Bootstrap-t UCL                                             | 0.683  |
| 95% Hall's Bootstrap UCL                                                                                                                                                                         | 0.725  | 95% Percentile Bootstrap UCL                                    | 0.419  |
| 95% BCA Bootstrap UCL                                                                                                                                                                            | 0.427  |                                                                 |        |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                      | 0.462  | 95% Chebyshev(Mean, Sd) UCL                                     | 0.515  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                    | 0.589  | 99% Chebyshev(Mean, Sd) UCL                                     | 0.735  |
| Suggested UCL to Use                                                                                                                                                                             |        |                                                                 |        |
| 95% Student's-t UCL                                                                                                                                                                              | 0.423  | or 95% Modified-t UCL                                           | 0.429  |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                     |        |                                                                 |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                       |        |                                                                 |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                         |        |                                                                 |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                        |        |                                                                 |        |
| result (i/uc_1,1-dichloroethene_75-35-4)                                                                                                                                                         |        |                                                                 |        |
| General Statistics                                                                                                                                                                               |        |                                                                 |        |
| Total Number of Observations                                                                                                                                                                     | 7      | Number of Distinct Observations                                 | 7      |
|                                                                                                                                                                                                  |        | Number of Missing Observations                                  | 0      |
| Minimum                                                                                                                                                                                          | 0.643  | Mean                                                            | 1.252  |
| Maximum                                                                                                                                                                                          | 1.65   | Median                                                          | 1.48   |
| SD                                                                                                                                                                                               | 0.4    | Std. Error of Mean                                              | 0.151  |
| Coefficient of Variation                                                                                                                                                                         | 0.32   | Skewness                                                        | -0.566 |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |        |                                                                 |        |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |        |                                                                 |        |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |        |                                                                 |        |
| Normal GOF Test                                                                                                                                                                                  |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.848  | Shapiro Wilk GOF Test                                           |        |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.803  | Data appear Normal at 5% Significance Level                     |        |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.287  | Lilliefors GOF Test                                             |        |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.304  | Data appear Normal at 5% Significance Level                     |        |
| Data appear Normal at 5% Significance Level                                                                                                                                                      |        |                                                                 |        |
| Assuming Normal Distribution                                                                                                                                                                     |        |                                                                 |        |
| 95% Normal UCL                                                                                                                                                                                   |        | 95% UCLs (Adjusted for Skewness)                                |        |
| 95% Student's-t UCL                                                                                                                                                                              | 1.546  | 95% Adjusted-CLT UCL (Chen-1995)                                | 1.466  |
|                                                                                                                                                                                                  |        | 95% Modified-t UCL (Johnson-1978)                               | 1.54   |
| Gamma GOF Test                                                                                                                                                                                   |        |                                                                 |        |
| A-D Test Statistic                                                                                                                                                                               | 0.642  | Anderson-Darling Gamma GOF Test                                 |        |
| 5% A-D Critical Value                                                                                                                                                                            | 0.709  | Detected data appear Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                                                                               | 0.312  | Kolmogorov-Smirnov Gamma GOF Test                               |        |
| 5% K-S Critical Value                                                                                                                                                                            | 0.312  | Data Not Gamma Distributed at 5% Significance Level             |        |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                                                                           |        |                                                                 |        |
| Gamma Statistics                                                                                                                                                                                 |        |                                                                 |        |
| k hat (MLE)                                                                                                                                                                                      | 9.816  | k star (bias corrected MLE)                                     | 5.704  |
| Theta hat (MLE)                                                                                                                                                                                  | 0.128  | Theta star (bias corrected MLE)                                 | 0.219  |
| nu hat (MLE)                                                                                                                                                                                     | 137.4  | nu star (bias corrected)                                        | 79.86  |
| MLE Mean (bias corrected)                                                                                                                                                                        | 1.252  | MLE Sd (bias corrected)                                         | 0.524  |
|                                                                                                                                                                                                  |        | Approximate Chi Square Value (0.05)                             | 60.27  |
| Adjusted Level of Significance                                                                                                                                                                   | 0.0158 | Adjusted Chi Square Value                                       | 55.16  |
| Assuming Gamma Distribution                                                                                                                                                                      |        |                                                                 |        |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                      | 1.658  | 95% Adjusted Gamma UCL (use when n<50)                          | 1.812  |
| Lognormal GOF Test                                                                                                                                                                               |        |                                                                 |        |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.838  | Shapiro Wilk Lognormal GOF Test                                 |        |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.803  | Data appear Lognormal at 5% Significance Level                  |        |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.299  | Lilliefors Lognormal GOF Test                                   |        |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.304  | Data appear Lognormal at 5% Significance Level                  |        |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                   |        |                                                                 |        |
| Lognormal Statistics                                                                                                                                                                             |        |                                                                 |        |
| Minimum of Logged Data                                                                                                                                                                           | -0.442 | Mean of logged Data                                             | 0.173  |
| Maximum of Logged Data                                                                                                                                                                           | 0.501  | SD of logged Data                                               | 0.363  |
| Assuming Lognormal Distribution                                                                                                                                                                  |        |                                                                 |        |
| 95% H-UCL                                                                                                                                                                                        | 1.777  | 90% Chebyshev (MVUE) UCL                                        | 1.775  |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                         | 2.01   | 97.5% Chebyshev (MVUE) UCL                                      | 2.336  |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                         | 2.976  |                                                                 |        |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                               |       |                                          |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------|-------|
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                                |       |                                          |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                                     |       |                                          |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                                          |       |                                          |       |
| 95% CLT UCL                                                                                                                                                                                                   | 1.5   | 95% Jackknife UCL                        | 1.546 |
| 95% Standard Bootstrap UCL                                                                                                                                                                                    | 1.477 | 95% Bootstrap-t UCL                      | 1.504 |
| 95% Hall's Bootstrap UCL                                                                                                                                                                                      | 1.426 | 95% Percentile Bootstrap UCL             | 1.482 |
| 95% BCA Bootstrap UCL                                                                                                                                                                                         | 1.473 |                                          |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                   | 1.705 | 95% Chebyshev(Mean, Sd) UCL              | 1.911 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                 | 2.196 | 99% Chebyshev(Mean, Sd) UCL              | 2.757 |
| Suggested UCL to Use                                                                                                                                                                                          |       |                                          |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 1.546 |                                          |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |       |                                          |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |       |                                          |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |       |                                          |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |       |                                          |       |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |       |                                          |       |
| result (/uc_1,2,4-trimethylbenzene_95-63-6)                                                                                                                                                                   |       |                                          |       |
| General Statistics                                                                                                                                                                                            |       |                                          |       |
| Total Number of Observations                                                                                                                                                                                  | 1     | Number of Distinct Observations          | 1     |
|                                                                                                                                                                                                               |       | Number of Missing Observations           | 0     |
| Minimum                                                                                                                                                                                                       | 2.21  | Mean                                     | 2.21  |
| Maximum                                                                                                                                                                                                       | 2.21  | Median                                   | 2.21  |
| Warning: This data set only has 1 observations!                                                                                                                                                               |       |                                          |       |
| Data set is too small to compute reliable and meaningful statistics and estimates!                                                                                                                            |       |                                          |       |
| The data set for variable result (/uc_1,2,4-trimethylbenzene_95-63-6) was not processed!                                                                                                                      |       |                                          |       |
| It is suggested to collect at least 8 to 10 observations before using these statistical methods!                                                                                                              |       |                                          |       |
| If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.                                                                                                      |       |                                          |       |
| result (/uc_1,2-dichloropropane_78-87-5)                                                                                                                                                                      |       |                                          |       |
| General Statistics                                                                                                                                                                                            |       |                                          |       |
| Total Number of Observations                                                                                                                                                                                  | 1     | Number of Distinct Observations          | 1     |
|                                                                                                                                                                                                               |       | Number of Missing Observations           | 0     |
| Minimum                                                                                                                                                                                                       | 0.232 | Mean                                     | 0.232 |
| Maximum                                                                                                                                                                                                       | 0.232 | Median                                   | 0.232 |
| Warning: This data set only has 1 observations!                                                                                                                                                               |       |                                          |       |
| Data set is too small to compute reliable and meaningful statistics and estimates!                                                                                                                            |       |                                          |       |
| The data set for variable result (/uc_1,2-dichloropropane_78-87-5) was not processed!                                                                                                                         |       |                                          |       |
| It is suggested to collect at least 8 to 10 observations before using these statistical methods!                                                                                                              |       |                                          |       |
| If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.                                                                                                      |       |                                          |       |
| result (/uc_acetone_67-64-1)                                                                                                                                                                                  |       |                                          |       |
| General Statistics                                                                                                                                                                                            |       |                                          |       |
| Total Number of Observations                                                                                                                                                                                  | 10    | Number of Distinct Observations          | 10    |
|                                                                                                                                                                                                               |       | Number of Missing Observations           | 0     |
| Minimum                                                                                                                                                                                                       | 10.7  | Mean                                     | 244.9 |
| Maximum                                                                                                                                                                                                       | 1210  | Median                                   | 38.75 |
| SD                                                                                                                                                                                                            | 447.1 | Std. Error of Mean                       | 141.4 |
| Coefficient of Variation                                                                                                                                                                                      | 1.825 | Skewness                                 | 1.851 |
| Normal GOF Test                                                                                                                                                                                               |       |                                          |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                                   | 0.561 | Shapiro Wilk GOF Test                    |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                | 0.842 | Data Not Normal at 5% Significance Level |       |
| Lilliefors Test Statistic                                                                                                                                                                                     | 0.46  | Lilliefors GOF Test                      |       |
| 5% Lilliefors Critical Value                                                                                                                                                                                  | 0.262 | Data Not Normal at 5% Significance Level |       |
| Data Not Normal at 5% Significance Level                                                                                                                                                                      |       |                                          |       |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Assuming Normal Distribution                                                                                                              |        |                                                     |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------|--------|
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                    |        |
| 95% Student's-t UCL                                                                                                                       | 504.1  | 95% Adjusted-CLT UCL (Chen-1995)                    | 565.9  |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                   | 517.9  |
| Gamma GOF Test                                                                                                                            |        |                                                     |        |
| A-D Test Statistic                                                                                                                        | 1.704  | Anderson-Darling Gamma GOF Test                     |        |
| 5% A-D Critical Value                                                                                                                     | 0.781  | Data Not Gamma Distributed at 5% Significance Level |        |
| K-S Test Statistic                                                                                                                        | 0.409  | Kolmogorov-Smirnov Gamma GOF Test                   |        |
| 5% K-S Critical Value                                                                                                                     | 0.282  | Data Not Gamma Distributed at 5% Significance Level |        |
| Data Not Gamma Distributed at 5% Significance Level                                                                                       |        |                                                     |        |
| Gamma Statistics                                                                                                                          |        |                                                     |        |
| k hat (MLE)                                                                                                                               | 0.477  | k star (bias corrected MLE)                         | 0.4    |
| Theta hat (MLE)                                                                                                                           | 513.6  | Theta star (bias corrected MLE)                     | 611.6  |
| nu hat (MLE)                                                                                                                              | 9.537  | nu star (bias corrected)                            | 8.01   |
| MLE Mean (bias corrected)                                                                                                                 | 244.9  | MLE Sd (bias corrected)                             | 387    |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                 | 2.741  |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                           | 2.234  |
| Assuming Gamma Distribution                                                                                                               |        |                                                     |        |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 715.8  | 95% Adjusted Gamma UCL (use when n<50)              | 877.9  |
| Lognormal GOF Test                                                                                                                        |        |                                                     |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.772  | Shapiro Wilk Lognormal GOF Test                     |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Lognormal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.317  | Lilliefors Lognormal GOF Test                       |        |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data Not Lognormal at 5% Significance Level         |        |
| Data Not Lognormal at 5% Significance Level                                                                                               |        |                                                     |        |
| Lognormal Statistics                                                                                                                      |        |                                                     |        |
| Minimum of Logged Data                                                                                                                    | 2.37   | Mean of logged Data                                 | 4.159  |
| Maximum of Logged Data                                                                                                                    | 7.098  | SD of logged Data                                   | 1.556  |
| Assuming Lognormal Distribution                                                                                                           |        |                                                     |        |
| 95% H-UCL                                                                                                                                 | 2036   | 90% Chebyshev (MVUE) UCL                            | 445    |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 567.8  | 97.5% Chebyshev (MVUE) UCL                          | 738.1  |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 1073   |                                                     |        |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                     |        |
| Data do not follow a Discernible Distribution (0.05)                                                                                      |        |                                                     |        |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                     |        |
| 95% CLT UCL                                                                                                                               | 477.5  | 95% Jackknife UCL                                   | 504.1  |
| 95% Standard Bootstrap UCL                                                                                                                | 464.4  | 95% Bootstrap-t UCL                                 | 7731   |
| 95% Hall's Bootstrap UCL                                                                                                                  | 4169   | 95% Percentile Bootstrap UCL                        | 479.2  |
| 95% BCA Bootstrap UCL                                                                                                                     | 520.4  |                                                     |        |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 669.1  | 95% Chebyshev(Mean, Sd) UCL                         | 861.2  |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 1128   | 99% Chebyshev(Mean, Sd) UCL                         | 1652   |
| Suggested UCL to Use                                                                                                                      |        |                                                     |        |
| 99% Chebyshev (Mean, Sd) UCL                                                                                                              | 1652   |                                                     |        |
| Recommended UCL exceeds the maximum observation                                                                                           |        |                                                     |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                     |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                     |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                     |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                     |        |
| result (/uc_carbon tetrachloride_56-23-5)                                                                                                 |        |                                                     |        |
| General Statistics                                                                                                                        |        |                                                     |        |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                     | 9      |
|                                                                                                                                           |        | Number of Missing Observations                      | 0      |
| Minimum                                                                                                                                   | 0.607  | Mean                                                | 0.978  |
| Maximum                                                                                                                                   | 1.19   | Median                                              | 1.035  |
| SD                                                                                                                                        | 0.182  | Std. Error of Mean                                  | 0.0576 |
| Coefficient of Variation                                                                                                                  | 0.186  | Skewness                                            | -1.229 |
| Normal GOF Test                                                                                                                           |        |                                                     |        |
| Shapiro Wilk Test Statistic                                                                                                               | 0.865  | Shapiro Wilk GOF Test                               |        |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data appear Normal at 5% Significance Level         |        |
| Lilliefors Test Statistic                                                                                                                 | 0.229  | Lilliefors GOF Test                                 |        |



TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                               |        |                                                                 |                                             |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|---------------------------------------------|-------|
| 5% Lilliefors Critical Value                                                                                                                                                                                  |        | 0.262                                                           | Data appear Normal at 5% Significance Level |       |
| Data appear Normal at 5% Significance Level                                                                                                                                                                   |        |                                                                 |                                             |       |
| Assuming Normal Distribution                                                                                                                                                                                  |        |                                                                 |                                             |       |
| 95% Normal UCL                                                                                                                                                                                                |        |                                                                 | 95% UCLs (Adjusted for Skewness)            |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 1.083  |                                                                 | 95% Adjusted-CLT UCL (Chen-1995)            | 1.049 |
|                                                                                                                                                                                                               |        |                                                                 | 95% Modified-t UCL (Johnson-1978)           | 1.08  |
| Gamma GOF Test                                                                                                                                                                                                |        |                                                                 |                                             |       |
| A-D Test Statistic                                                                                                                                                                                            | 0.816  | Anderson-Darling Gamma GOF Test                                 |                                             |       |
| 5% A-D Critical Value                                                                                                                                                                                         | 0.725  | Data Not Gamma Distributed at 5% Significance Level             |                                             |       |
| K-S Test Statistic                                                                                                                                                                                            | 0.255  | Kolmogorov-Smirnov Gamma GOF Test                               |                                             |       |
| 5% K-S Critical Value                                                                                                                                                                                         | 0.266  | Detected data appear Gamma Distributed at 5% Significance Level |                                             |       |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                                                                                        |        |                                                                 |                                             |       |
| Gamma Statistics                                                                                                                                                                                              |        |                                                                 |                                             |       |
| k hat (MLE)                                                                                                                                                                                                   | 27.2   | k star (bias corrected MLE)                                     | 19.11                                       |       |
| Theta hat (MLE)                                                                                                                                                                                               | 0.0359 | Theta star (bias corrected MLE)                                 | 0.0512                                      |       |
| nu hat (MLE)                                                                                                                                                                                                  | 544.1  | nu star (bias corrected)                                        | 382.2                                       |       |
| MLE Mean (bias corrected)                                                                                                                                                                                     | 0.978  | MLE Sd (bias corrected)                                         | 0.224                                       |       |
|                                                                                                                                                                                                               |        | Approximate Chi Square Value (0.05)                             | 337.9                                       |       |
| Adjusted Level of Significance                                                                                                                                                                                | 0.0267 | Adjusted Chi Square Value                                       | 330.6                                       |       |
| Assuming Gamma Distribution                                                                                                                                                                                   |        |                                                                 |                                             |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                                   | 1.106  | 95% Adjusted Gamma UCL (use when n<50)                          | 1.13                                        |       |
| Lognormal GOF Test                                                                                                                                                                                            |        |                                                                 |                                             |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                                   | 0.816  | Shapiro Wilk Lognormal GOF Test                                 |                                             |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                | 0.842  | Data Not Lognormal at 5% Significance Level                     |                                             |       |
| Lilliefors Test Statistic                                                                                                                                                                                     | 0.271  | Lilliefors Lognormal GOF Test                                   |                                             |       |
| 5% Lilliefors Critical Value                                                                                                                                                                                  | 0.262  | Data Not Lognormal at 5% Significance Level                     |                                             |       |
| Data Not Lognormal at 5% Significance Level                                                                                                                                                                   |        |                                                                 |                                             |       |
| Lognormal Statistics                                                                                                                                                                                          |        |                                                                 |                                             |       |
| Minimum of Logged Data                                                                                                                                                                                        | -0.499 | Mean of logged Data                                             | -0.041                                      |       |
| Maximum of Logged Data                                                                                                                                                                                        | 0.174  | SD of logged Data                                               | 0.212                                       |       |
| Assuming Lognormal Distribution                                                                                                                                                                               |        |                                                                 |                                             |       |
| 95% H-UCL                                                                                                                                                                                                     | 1.122  | 90% Chebyshev (MVUE) UCL                                        | 1.177                                       |       |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 1.266  | 97.5% Chebyshev (MVUE) UCL                                      | 1.39                                        |       |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 1.634  |                                                                 |                                             |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                                |        |                                                                 |                                             |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                                     |        |                                                                 |                                             |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                                          |        |                                                                 |                                             |       |
| 95% CLT UCL                                                                                                                                                                                                   | 1.072  | 95% Jackknife UCL                                               | 1.083                                       |       |
| 95% Standard Bootstrap UCL                                                                                                                                                                                    | 1.067  | 95% Bootstrap-t UCL                                             | 1.059                                       |       |
| 95% Hall's Bootstrap UCL                                                                                                                                                                                      | 1.048  | 95% Percentile Bootstrap UCL                                    | 1.063                                       |       |
| 95% BCA Bootstrap UCL                                                                                                                                                                                         | 1.052  |                                                                 |                                             |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                   | 1.151  | 95% Chebyshev(Mean, Sd) UCL                                     | 1.229                                       |       |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                 | 1.337  | 99% Chebyshev(Mean, Sd) UCL                                     | 1.551                                       |       |
| Suggested UCL to Use                                                                                                                                                                                          |        |                                                                 |                                             |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 1.083  |                                                                 |                                             |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |        |                                                                 |                                             |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |        |                                                                 |                                             |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |        |                                                                 |                                             |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |        |                                                                 |                                             |       |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |        |                                                                 |                                             |       |
| result (/uc_chloroform_67-66-3)                                                                                                                                                                               |        |                                                                 |                                             |       |
| General Statistics                                                                                                                                                                                            |        |                                                                 |                                             |       |
| Total Number of Observations                                                                                                                                                                                  | 10     | Number of Distinct Observations                                 | 10                                          |       |
|                                                                                                                                                                                                               |        | Number of Missing Observations                                  | 0                                           |       |
| Minimum                                                                                                                                                                                                       | 2.7    | Mean                                                            | 6.13                                        |       |
| Maximum                                                                                                                                                                                                       | 11     | Median                                                          | 3.52                                        |       |
| SD                                                                                                                                                                                                            | 3.907  | Std. Error of Mean                                              | 1.235                                       |       |
| Coefficient of Variation                                                                                                                                                                                      | 0.637  | Skewness                                                        | 0.477                                       |       |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Normal GOF Test                                                                                                                           |        |                                                     |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------|-------|
| Shapiro Wilk Test Statistic                                                                                                               | 0.716  | Shapiro Wilk GOF Test                               |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Normal at 5% Significance Level            |       |
| Lilliefors Test Statistic                                                                                                                 | 0.335  | Lilliefors GOF Test                                 |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data Not Normal at 5% Significance Level            |       |
| Data Not Normal at 5% Significance Level                                                                                                  |        |                                                     |       |
| Assuming Normal Distribution                                                                                                              |        |                                                     |       |
| 95% Normal UCL                                                                                                                            |        | 95% UCLs (Adjusted for Skewness)                    |       |
| 95% Student's-t UCL                                                                                                                       | 8.395  | 95% Adjusted-CLT UCL (Chen-1995)                    | 8.361 |
|                                                                                                                                           |        | 95% Modified-t UCL (Johnson-1978)                   | 8.426 |
| Gamma GOF Test                                                                                                                            |        |                                                     |       |
| A-D Test Statistic                                                                                                                        | 1.322  | Anderson-Darling Gamma GOF Test                     |       |
| 5% A-D Critical Value                                                                                                                     | 0.733  | Data Not Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                        | 0.319  | Kolmogorov-Smirnov Gamma GOF Test                   |       |
| 5% K-S Critical Value                                                                                                                     | 0.269  | Data Not Gamma Distributed at 5% Significance Level |       |
| Data Not Gamma Distributed at 5% Significance Level                                                                                       |        |                                                     |       |
| Gamma Statistics                                                                                                                          |        |                                                     |       |
| k hat (MLE)                                                                                                                               | 2.804  | k star (bias corrected MLE)                         | 2.03  |
| Theta hat (MLE)                                                                                                                           | 2.186  | Theta star (bias corrected MLE)                     | 3.02  |
| nu hat (MLE)                                                                                                                              | 56.09  | nu star (bias corrected)                            | 40.59 |
| MLE Mean (bias corrected)                                                                                                                 | 6.13   | MLE Sd (bias corrected)                             | 4.303 |
|                                                                                                                                           |        | Approximate Chi Square Value (0.05)                 | 26.99 |
| Adjusted Level of Significance                                                                                                            | 0.0267 | Adjusted Chi Square Value                           | 25.08 |
| Assuming Gamma Distribution                                                                                                               |        |                                                     |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                               | 9.218  | 95% Adjusted Gamma UCL (use when n<50)              | 9.922 |
| Lognormal GOF Test                                                                                                                        |        |                                                     |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.75   | Shapiro Wilk Lognormal GOF Test                     |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.842  | Data Not Lognormal at 5% Significance Level         |       |
| Lilliefors Test Statistic                                                                                                                 | 0.291  | Lilliefors Lognormal GOF Test                       |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.262  | Data Not Lognormal at 5% Significance Level         |       |
| Data Not Lognormal at 5% Significance Level                                                                                               |        |                                                     |       |
| Lognormal Statistics                                                                                                                      |        |                                                     |       |
| Minimum of Logged Data                                                                                                                    | 0.993  | Mean of logged Data                                 | 1.624 |
| Maximum of Logged Data                                                                                                                    | 2.398  | SD of logged Data                                   | 0.644 |
| Assuming Lognormal Distribution                                                                                                           |        |                                                     |       |
| 95% H-UCL                                                                                                                                 | 10.54  | 90% Chebyshev (MVUE) UCL                            | 9.927 |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 11.66  | 97.5% Chebyshev (MVUE) UCL                          | 14.07 |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 18.79  |                                                     |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                     |       |
| Data do not follow a Discernible Distribution (0.05)                                                                                      |        |                                                     |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                     |       |
| 95% CLT UCL                                                                                                                               | 8.162  | 95% Jackknife UCL                                   | 8.395 |
| 95% Standard Bootstrap UCL                                                                                                                | 8.051  | 95% Bootstrap-t UCL                                 | 8.453 |
| 95% Hall's Bootstrap UCL                                                                                                                  | 7.537  | 95% Percentile Bootstrap UCL                        | 7.842 |
| 95% BCA Bootstrap UCL                                                                                                                     | 8.292  |                                                     |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 9.836  | 95% Chebyshev(Mean, Sd) UCL                         | 11.52 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 13.85  | 99% Chebyshev(Mean, Sd) UCL                         | 18.42 |
| Suggested UCL to Use                                                                                                                      |        |                                                     |       |
| 95% Chebyshev (Mean, Sd) UCL                                                                                                              | 11.52  |                                                     |       |
| Recommended UCL exceeds the maximum observation                                                                                           |        |                                                     |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                     |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                     |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                     |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                     |       |
| result (l/uc_cis-1,2-dichloroethylene_156-59-2)                                                                                           |        |                                                     |       |
| General Statistics                                                                                                                        |        |                                                     |       |
| Total Number of Observations                                                                                                              | 10     | Number of Distinct Observations                     | 10    |
|                                                                                                                                           |        | Number of Missing Observations                      | 0     |
| Minimum                                                                                                                                   | 2.25   | Mean                                                | 14.91 |
| Maximum                                                                                                                                   | 27.6   | Median                                              | 16.35 |



TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                               |                                             |        |                                                                 |                                        |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------|-----------------------------------------------------------------|----------------------------------------|--------|
|                                                                                                                                                                                                               | SD                                          | 8.807  |                                                                 | Std. Error of Mean                     | 2.785  |
|                                                                                                                                                                                                               | Coefficient of Variation                    | 0.591  |                                                                 | Skewness                               | -0.139 |
| Normal GOF Test                                                                                                                                                                                               |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | Shapiro Wilk Test Statistic                 | 0.948  | Shapiro Wilk GOF Test                                           |                                        |        |
|                                                                                                                                                                                                               | 5% Shapiro Wilk Critical Value              | 0.842  | Data appear Normal at 5% Significance Level                     |                                        |        |
|                                                                                                                                                                                                               | Lilliefors Test Statistic                   | 0.145  | Lilliefors GOF Test                                             |                                        |        |
|                                                                                                                                                                                                               | 5% Lilliefors Critical Value                | 0.262  | Data appear Normal at 5% Significance Level                     |                                        |        |
| Data appear Normal at 5% Significance Level                                                                                                                                                                   |                                             |        |                                                                 |                                        |        |
| Assuming Normal Distribution                                                                                                                                                                                  |                                             |        |                                                                 |                                        |        |
| 95% Normal UCL                                                                                                                                                                                                |                                             |        | 95% UCLs (Adjusted for Skewness)                                |                                        |        |
|                                                                                                                                                                                                               | 95% Student's-t UCL                         | 20.02  |                                                                 | 95% Adjusted-CLT UCL (Chen-1995)       | 19.36  |
|                                                                                                                                                                                                               |                                             |        |                                                                 | 95% Modified-t UCL (Johnson-1978)      | 20     |
| Gamma GOF Test                                                                                                                                                                                                |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | A-D Test Statistic                          | 0.464  | Anderson-Darling Gamma GOF Test                                 |                                        |        |
|                                                                                                                                                                                                               | 5% A-D Critical Value                       | 0.735  | Detected data appear Gamma Distributed at 5% Significance Level |                                        |        |
|                                                                                                                                                                                                               | K-S Test Statistic                          | 0.201  | Kolmogorov-Smirnov Gamma GOF Test                               |                                        |        |
|                                                                                                                                                                                                               | 5% K-S Critical Value                       | 0.27   | Detected data appear Gamma Distributed at 5% Significance Level |                                        |        |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                                                                                               |                                             |        |                                                                 |                                        |        |
| Gamma Statistics                                                                                                                                                                                              |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | k hat (MLE)                                 | 2.116  |                                                                 | k star (bias corrected MLE)            | 1.548  |
|                                                                                                                                                                                                               | Theta hat (MLE)                             | 7.048  |                                                                 | Theta star (bias corrected MLE)        | 9.635  |
|                                                                                                                                                                                                               | nu hat (MLE)                                | 42.32  |                                                                 | nu star (bias corrected)               | 30.96  |
|                                                                                                                                                                                                               | MLE Mean (bias corrected)                   | 14.91  |                                                                 | MLE Sd (bias corrected)                | 11.99  |
|                                                                                                                                                                                                               |                                             |        |                                                                 | Approximate Chi Square Value (0.05)    | 19.25  |
|                                                                                                                                                                                                               | Adjusted Level of Significance              | 0.0267 |                                                                 | Adjusted Chi Square Value              | 17.66  |
| Assuming Gamma Distribution                                                                                                                                                                                   |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | 95% Approximate Gamma UCL (use when n>=50)) | 23.99  |                                                                 | 95% Adjusted Gamma UCL (use when n<50) | 26.15  |
| Lognormal GOF Test                                                                                                                                                                                            |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | Shapiro Wilk Test Statistic                 | 0.86   | Shapiro Wilk Lognormal GOF Test                                 |                                        |        |
|                                                                                                                                                                                                               | 5% Shapiro Wilk Critical Value              | 0.842  | Data appear Lognormal at 5% Significance Level                  |                                        |        |
|                                                                                                                                                                                                               | Lilliefors Test Statistic                   | 0.203  | Lilliefors Lognormal GOF Test                                   |                                        |        |
|                                                                                                                                                                                                               | 5% Lilliefors Critical Value                | 0.262  | Data appear Lognormal at 5% Significance Level                  |                                        |        |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                                |                                             |        |                                                                 |                                        |        |
| Lognormal Statistics                                                                                                                                                                                          |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | Minimum of Logged Data                      | 0.811  |                                                                 | Mean of logged Data                    | 2.448  |
|                                                                                                                                                                                                               | Maximum of Logged Data                      | 3.318  |                                                                 | SD of logged Data                      | 0.865  |
| Assuming Lognormal Distribution                                                                                                                                                                               |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | 95% H-UCL                                   | 38.05  |                                                                 | 90% Chebyshev (MVUE) UCL               | 29.74  |
|                                                                                                                                                                                                               | 95% Chebyshev (MVUE) UCL                    | 35.95  |                                                                 | 97.5% Chebyshev (MVUE) UCL             | 44.56  |
|                                                                                                                                                                                                               | 99% Chebyshev (MVUE) UCL                    | 61.49  |                                                                 |                                        |        |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                                |                                             |        |                                                                 |                                        |        |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                                     |                                             |        |                                                                 |                                        |        |
| Nonparametric Distribution Free UCLs                                                                                                                                                                          |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | 95% CLT UCL                                 | 19.5   |                                                                 | 95% Jackknife UCL                      | 20.02  |
|                                                                                                                                                                                                               | 95% Standard Bootstrap UCL                  | 19.2   |                                                                 | 95% Bootstrap-t UCL                    | 19.69  |
|                                                                                                                                                                                                               | 95% Hall's Bootstrap UCL                    | 19.19  |                                                                 | 95% Percentile Bootstrap UCL           | 19.29  |
|                                                                                                                                                                                                               | 95% BCA Bootstrap UCL                       | 19.07  |                                                                 |                                        |        |
|                                                                                                                                                                                                               | 90% Chebyshev(Mean, Sd) UCL                 | 23.27  |                                                                 | 95% Chebyshev(Mean, Sd) UCL            | 27.05  |
|                                                                                                                                                                                                               | 97.5% Chebyshev(Mean, Sd) UCL               | 32.31  |                                                                 | 99% Chebyshev(Mean, Sd) UCL            | 42.62  |
| Suggested UCL to Use                                                                                                                                                                                          |                                             |        |                                                                 |                                        |        |
|                                                                                                                                                                                                               | 95% Student's-t UCL                         | 20.02  |                                                                 |                                        |        |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |                                             |        |                                                                 |                                        |        |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |                                             |        |                                                                 |                                        |        |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |                                             |        |                                                                 |                                        |        |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |                                             |        |                                                                 |                                        |        |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |                                             |        |                                                                 |                                        |        |
| result (/uc_methyl ethyl ketone (2-butanone)_78-93-3)                                                                                                                                                         |                                             |        |                                                                 |                                        |        |
| General Statistics                                                                                                                                                                                            |                                             |        |                                                                 |                                        |        |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                            |           |   |                                                                 |       |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---|-----------------------------------------------------------------|-------|---|
| Total Number of Observations                                                                                                                                                                               |           | 4 | Number of Distinct Observations                                 |       | 4 |
|                                                                                                                                                                                                            |           |   | Number of Missing Observations                                  |       | 0 |
| Minimum                                                                                                                                                                                                    | 3.33      |   | Mean                                                            | 1402  |   |
| Maximum                                                                                                                                                                                                    | 2910      |   | Median                                                          | 1347  |   |
| SD                                                                                                                                                                                                         | 1617      |   | Std. Error of Mean                                              | 808.5 |   |
| Coefficient of Variation                                                                                                                                                                                   | 1.154     |   | Skewness                                                        | 0.016 |   |
| <b>Note: Sample size is small (e.g., &lt;10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.</b> |           |   |                                                                 |       |   |
| <b>For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).</b>                                                                                                                        |           |   |                                                                 |       |   |
| <b>Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1</b>                                                                                                             |           |   |                                                                 |       |   |
| <b>Normal GOF Test</b>                                                                                                                                                                                     |           |   |                                                                 |       |   |
| Shapiro Wilk Test Statistic                                                                                                                                                                                | 0.764     |   | <b>Shapiro Wilk GOF Test</b>                                    |       |   |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                             | 0.748     |   | Data appear Normal at 5% Significance Level                     |       |   |
| Lilliefors Test Statistic                                                                                                                                                                                  | 0.306     |   | <b>Lilliefors GOF Test</b>                                      |       |   |
| 5% Lilliefors Critical Value                                                                                                                                                                               | 0.375     |   | Data appear Normal at 5% Significance Level                     |       |   |
| <b>Data appear Normal at 5% Significance Level</b>                                                                                                                                                         |           |   |                                                                 |       |   |
| <b>Assuming Normal Distribution</b>                                                                                                                                                                        |           |   |                                                                 |       |   |
| <b>95% Normal UCL</b>                                                                                                                                                                                      |           |   | <b>95% UCLs (Adjusted for Skewness)</b>                         |       |   |
| 95% Student's-t UCL                                                                                                                                                                                        | 3305      |   | 95% Adjusted-CLT UCL (Chen-1995)                                | 2739  |   |
|                                                                                                                                                                                                            |           |   | 95% Modified-t UCL (Johnson-1978)                               | 3306  |   |
| <b>Gamma GOF Test</b>                                                                                                                                                                                      |           |   |                                                                 |       |   |
| A-D Test Statistic                                                                                                                                                                                         | 0.703     |   | <b>Anderson-Darling Gamma GOF Test</b>                          |       |   |
| 5% A-D Critical Value                                                                                                                                                                                      | 0.714     |   | Detected data appear Gamma Distributed at 5% Significance Level |       |   |
| K-S Test Statistic                                                                                                                                                                                         | 0.34      |   | <b>Kolmogorov-Smirnov Gamma GOF Test</b>                        |       |   |
| 5% K-S Critical Value                                                                                                                                                                                      | 0.421     |   | Detected data appear Gamma Distributed at 5% Significance Level |       |   |
| <b>Detected data appear Gamma Distributed at 5% Significance Level</b>                                                                                                                                     |           |   |                                                                 |       |   |
| <b>Gamma Statistics</b>                                                                                                                                                                                    |           |   |                                                                 |       |   |
| k hat (MLE)                                                                                                                                                                                                | 0.264     |   | k star (bias corrected MLE)                                     | 0.233 |   |
| Theta hat (MLE)                                                                                                                                                                                            | 5301      |   | Theta star (bias corrected MLE)                                 | 6022  |   |
| nu hat (MLE)                                                                                                                                                                                               | 2.115     |   | nu star (bias corrected)                                        | 1.862 |   |
| MLE Mean (bias corrected)                                                                                                                                                                                  | 1402      |   | MLE Sd (bias corrected)                                         | 2905  |   |
|                                                                                                                                                                                                            |           |   | Approximate Chi Square Value (0.05)                             | 0.135 |   |
| Adjusted Level of Significance                                                                                                                                                                             | N/A       |   | Adjusted Chi Square Value                                       | N/A   |   |
| <b>Assuming Gamma Distribution</b>                                                                                                                                                                         |           |   |                                                                 |       |   |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                                | 19352     |   | 95% Adjusted Gamma UCL (use when n<50)                          | N/A   |   |
| <b>Lognormal GOF Test</b>                                                                                                                                                                                  |           |   |                                                                 |       |   |
| Shapiro Wilk Test Statistic                                                                                                                                                                                | 0.74      |   | <b>Shapiro Wilk Lognormal GOF Test</b>                          |       |   |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                             | 0.748     |   | Data Not Lognormal at 5% Significance Level                     |       |   |
| Lilliefors Test Statistic                                                                                                                                                                                  | 0.305     |   | <b>Lilliefors Lognormal GOF Test</b>                            |       |   |
| 5% Lilliefors Critical Value                                                                                                                                                                               | 0.375     |   | Data appear Lognormal at 5% Significance Level                  |       |   |
| <b>Data appear Approximate Lognormal at 5% Significance Level</b>                                                                                                                                          |           |   |                                                                 |       |   |
| <b>Lognormal Statistics</b>                                                                                                                                                                                |           |   |                                                                 |       |   |
| Minimum of Logged Data                                                                                                                                                                                     | 1.203     |   | Mean of logged Data                                             | 4.584 |   |
| Maximum of Logged Data                                                                                                                                                                                     | 7.976     |   | SD of logged Data                                               | 3.872 |   |
| <b>Assuming Lognormal Distribution</b>                                                                                                                                                                     |           |   |                                                                 |       |   |
| 95% H-UCL                                                                                                                                                                                                  | 6.055E+29 |   | 90% Chebyshev (MVUE) UCL                                        | 10901 |   |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                                   | 14568     |   | 97.5% Chebyshev (MVUE) UCL                                      | 19658 |   |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                                   | 29656     |   |                                                                 |       |   |
| <b>Nonparametric Distribution Free UCL Statistics</b>                                                                                                                                                      |           |   |                                                                 |       |   |
| <b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>                                                                                                                           |           |   |                                                                 |       |   |
| <b>Nonparametric Distribution Free UCLs</b>                                                                                                                                                                |           |   |                                                                 |       |   |
| 95% CLT UCL                                                                                                                                                                                                | 2732      |   | 95% Jackknife UCL                                               | 3305  |   |
| 95% Standard Bootstrap UCL                                                                                                                                                                                 | N/A       |   | 95% Bootstrap-t UCL                                             | N/A   |   |
| 95% Hall's Bootstrap UCL                                                                                                                                                                                   | N/A       |   | 95% Percentile Bootstrap UCL                                    | N/A   |   |
| 95% BCA Bootstrap UCL                                                                                                                                                                                      | N/A       |   |                                                                 |       |   |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                | 3827      |   | 95% Chebyshev(Mean, Sd) UCL                                     | 4926  |   |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                              | 6451      |   | 99% Chebyshev(Mean, Sd) UCL                                     | 9447  |   |
| <b>Suggested UCL to Use</b>                                                                                                                                                                                |           |   |                                                                 |       |   |
| 95% Student's-t UCL                                                                                                                                                                                        | 3305      |   |                                                                 |       |   |
| <b>Recommended UCL exceeds the maximum observation</b>                                                                                                                                                     |           |   |                                                                 |       |   |
| <b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>                                                                        |           |   |                                                                 |       |   |

TABLE D.12

PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER

HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT

MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (i/uc\_methyl tert-butyl ether\_1634-04-4)

| General Statistics                                                        |        |  |                                                                 |        |  |
|---------------------------------------------------------------------------|--------|--|-----------------------------------------------------------------|--------|--|
| Total Number of Observations                                              | 10     |  | Number of Distinct Observations                                 | 10     |  |
|                                                                           |        |  | Number of Missing Observations                                  | 0      |  |
| Minimum                                                                   | 1.83   |  | Mean                                                            | 3.713  |  |
| Maximum                                                                   | 5.05   |  | Median                                                          | 4.055  |  |
| SD                                                                        | 1.128  |  | Std. Error of Mean                                              | 0.357  |  |
| Coefficient of Variation                                                  | 0.304  |  | Skewness                                                        | -0.458 |  |
| Normal GOF Test                                                           |        |  |                                                                 |        |  |
| Shapiro Wilk Test Statistic                                               | 0.919  |  | Shapiro Wilk GOF Test                                           |        |  |
| 5% Shapiro Wilk Critical Value                                            | 0.842  |  | Data appear Normal at 5% Significance Level                     |        |  |
| Lilliefors Test Statistic                                                 | 0.183  |  | Lilliefors GOF Test                                             |        |  |
| 5% Lilliefors Critical Value                                              | 0.262  |  | Data appear Normal at 5% Significance Level                     |        |  |
| Data appear Normal at 5% Significance Level                               |        |  |                                                                 |        |  |
| Assuming Normal Distribution                                              |        |  |                                                                 |        |  |
| 95% Normal UCL                                                            |        |  | 95% UCLs (Adjusted for Skewness)                                |        |  |
| 95% Student's-t UCL                                                       | 4.367  |  | 95% Adjusted-CLT UCL (Chen-1995)                                | 4.244  |  |
|                                                                           |        |  | 95% Modified-t UCL (Johnson-1978)                               | 4.358  |  |
| Gamma GOF Test                                                            |        |  |                                                                 |        |  |
| A-D Test Statistic                                                        | 0.466  |  | Anderson-Darling Gamma GOF Test                                 |        |  |
| 5% A-D Critical Value                                                     | 0.725  |  | Detected data appear Gamma Distributed at 5% Significance Level |        |  |
| K-S Test Statistic                                                        | 0.208  |  | Kolmogorov-Smirnov Gamma GOF Test                               |        |  |
| 5% K-S Critical Value                                                     | 0.267  |  | Detected data appear Gamma Distributed at 5% Significance Level |        |  |
| Detected data appear Gamma Distributed at 5% Significance Level           |        |  |                                                                 |        |  |
| Gamma Statistics                                                          |        |  |                                                                 |        |  |
| k hat (MLE)                                                               | 10.4   |  | k star (bias corrected MLE)                                     | 7.345  |  |
| Theta hat (MLE)                                                           | 0.357  |  | Theta star (bias corrected MLE)                                 | 0.505  |  |
| nu hat (MLE)                                                              | 208    |  | nu star (bias corrected)                                        | 146.9  |  |
| MLE Mean (bias corrected)                                                 | 3.713  |  | MLE Sd (bias corrected)                                         | 1.37   |  |
|                                                                           |        |  | Approximate Chi Square Value (0.05)                             | 119.9  |  |
| Adjusted Level of Significance                                            | 0.0267 |  | Adjusted Chi Square Value                                       | 115.7  |  |
| Assuming Gamma Distribution                                               |        |  |                                                                 |        |  |
| 95% Approximate Gamma UCL (use when n>=50))                               | 4.55   |  | 95% Adjusted Gamma UCL (use when n<50)                          | 4.716  |  |
| Lognormal GOF Test                                                        |        |  |                                                                 |        |  |
| Shapiro Wilk Test Statistic                                               | 0.893  |  | Shapiro Wilk Lognormal GOF Test                                 |        |  |
| 5% Shapiro Wilk Critical Value                                            | 0.842  |  | Data appear Lognormal at 5% Significance Level                  |        |  |
| Lilliefors Test Statistic                                                 | 0.204  |  | Lilliefors Lognormal GOF Test                                   |        |  |
| 5% Lilliefors Critical Value                                              | 0.262  |  | Data appear Lognormal at 5% Significance Level                  |        |  |
| Data appear Lognormal at 5% Significance Level                            |        |  |                                                                 |        |  |
| Lognormal Statistics                                                      |        |  |                                                                 |        |  |
| Minimum of Logged Data                                                    | 0.604  |  | Mean of logged Data                                             | 1.263  |  |
| Maximum of Logged Data                                                    | 1.619  |  | SD of logged Data                                               | 0.344  |  |
| Assuming Lognormal Distribution                                           |        |  |                                                                 |        |  |
| 95% H-UCL                                                                 | 4.732  |  | 90% Chebyshev (MVUE) UCL                                        | 4.956  |  |
| 95% Chebyshev (MVUE) UCL                                                  | 5.513  |  | 97.5% Chebyshev (MVUE) UCL                                      | 6.285  |  |
| 99% Chebyshev (MVUE) UCL                                                  | 7.801  |  |                                                                 |        |  |
| Nonparametric Distribution Free UCL Statistics                            |        |  |                                                                 |        |  |
| Data appear to follow a Discernible Distribution at 5% Significance Level |        |  |                                                                 |        |  |
| Nonparametric Distribution Free UCLs                                      |        |  |                                                                 |        |  |
| 95% CLT UCL                                                               | 4.3    |  | 95% Jackknife UCL                                               | 4.367  |  |
| 95% Standard Bootstrap UCL                                                | 4.283  |  | 95% Bootstrap-t UCL                                             | 4.307  |  |
| 95% Hall's Bootstrap UCL                                                  | 4.209  |  | 95% Percentile Bootstrap UCL                                    | 4.242  |  |
| 95% BCA Bootstrap UCL                                                     | 4.209  |  |                                                                 |        |  |
| 90% Chebyshev(Mean, Sd) UCL                                               | 4.783  |  | 95% Chebyshev(Mean, Sd) UCL                                     | 5.267  |  |
| 97.5% Chebyshev(Mean, Sd) UCL                                             | 5.94   |  | 99% Chebyshev(Mean, Sd) UCL                                     | 7.261  |  |
| Suggested UCL to Use                                                      |        |  |                                                                 |        |  |
| 95% Student's-t UCL                                                       | 4.367  |  |                                                                 |        |  |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                               |  |        |  |                                                                 |  |       |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|--|-----------------------------------------------------------------|--|-------|--|--|--|
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |  |        |  |                                                                 |  |       |  |  |  |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |  |        |  |                                                                 |  |       |  |  |  |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |  |        |  |                                                                 |  |       |  |  |  |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |  |        |  |                                                                 |  |       |  |  |  |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |  |        |  |                                                                 |  |       |  |  |  |
| result (i/uc_methylene chloride_75-09-2)                                                                                                                                                                      |  |        |  |                                                                 |  |       |  |  |  |
| General Statistics                                                                                                                                                                                            |  |        |  |                                                                 |  |       |  |  |  |
| Total Number of Observations                                                                                                                                                                                  |  | 1      |  | Number of Distinct Observations                                 |  | 1     |  |  |  |
|                                                                                                                                                                                                               |  |        |  | Number of Missing Observations                                  |  | 0     |  |  |  |
| Minimum                                                                                                                                                                                                       |  | 2.58   |  | Mean                                                            |  | 2.58  |  |  |  |
| Maximum                                                                                                                                                                                                       |  | 2.58   |  | Median                                                          |  | 2.58  |  |  |  |
| Warning: This data set only has 1 observations!                                                                                                                                                               |  |        |  |                                                                 |  |       |  |  |  |
| Data set is too small to compute reliable and meaningful statistics and estimates!                                                                                                                            |  |        |  |                                                                 |  |       |  |  |  |
| The data set for variable result (i/uc_methylene chloride_75-09-2) was not processed!                                                                                                                         |  |        |  |                                                                 |  |       |  |  |  |
| It is suggested to collect at least 8 to 10 observations before using these statistical methods!                                                                                                              |  |        |  |                                                                 |  |       |  |  |  |
| If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.                                                                                                      |  |        |  |                                                                 |  |       |  |  |  |
| result (i/uc_tetrachloroethylene_127-18-4)                                                                                                                                                                    |  |        |  |                                                                 |  |       |  |  |  |
| General Statistics                                                                                                                                                                                            |  |        |  |                                                                 |  |       |  |  |  |
| Total Number of Observations                                                                                                                                                                                  |  | 10     |  | Number of Distinct Observations                                 |  | 10    |  |  |  |
|                                                                                                                                                                                                               |  |        |  | Number of Missing Observations                                  |  | 0     |  |  |  |
| Minimum                                                                                                                                                                                                       |  | 36     |  | Mean                                                            |  | 68.86 |  |  |  |
| Maximum                                                                                                                                                                                                       |  | 127    |  | Median                                                          |  | 58.25 |  |  |  |
| SD                                                                                                                                                                                                            |  | 32.67  |  | Std. Error of Mean                                              |  | 10.33 |  |  |  |
| Coefficient of Variation                                                                                                                                                                                      |  | 0.474  |  | Skewness                                                        |  | 0.894 |  |  |  |
| Normal GOF Test                                                                                                                                                                                               |  |        |  |                                                                 |  |       |  |  |  |
| Shapiro Wilk Test Statistic                                                                                                                                                                                   |  | 0.865  |  | Shapiro Wilk GOF Test                                           |  |       |  |  |  |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                |  | 0.842  |  | Data appear Normal at 5% Significance Level                     |  |       |  |  |  |
| Lilliefors Test Statistic                                                                                                                                                                                     |  | 0.181  |  | Lilliefors GOF Test                                             |  |       |  |  |  |
| 5% Lilliefors Critical Value                                                                                                                                                                                  |  | 0.262  |  | Data appear Normal at 5% Significance Level                     |  |       |  |  |  |
| Data appear Normal at 5% Significance Level                                                                                                                                                                   |  |        |  |                                                                 |  |       |  |  |  |
| Assuming Normal Distribution                                                                                                                                                                                  |  |        |  |                                                                 |  |       |  |  |  |
| 95% Normal UCL                                                                                                                                                                                                |  |        |  | 95% UCLs (Adjusted for Skewness)                                |  |       |  |  |  |
| 95% Student's-t UCL                                                                                                                                                                                           |  | 87.8   |  | 95% Adjusted-CLT UCL (Chen-1995)                                |  | 88.97 |  |  |  |
|                                                                                                                                                                                                               |  |        |  | 95% Modified-t UCL (Johnson-1978)                               |  | 88.28 |  |  |  |
| Gamma GOF Test                                                                                                                                                                                                |  |        |  |                                                                 |  |       |  |  |  |
| A-D Test Statistic                                                                                                                                                                                            |  | 0.464  |  | Anderson-Darling Gamma GOF Test                                 |  |       |  |  |  |
| 5% A-D Critical Value                                                                                                                                                                                         |  | 0.729  |  | Detected data appear Gamma Distributed at 5% Significance Level |  |       |  |  |  |
| K-S Test Statistic                                                                                                                                                                                            |  | 0.201  |  | Kolmogorov-Smirnov Gamma GOF Test                               |  |       |  |  |  |
| 5% K-S Critical Value                                                                                                                                                                                         |  | 0.267  |  | Detected data appear Gamma Distributed at 5% Significance Level |  |       |  |  |  |
| Detected data appear Gamma Distributed at 5% Significance Level                                                                                                                                               |  |        |  |                                                                 |  |       |  |  |  |
| Gamma Statistics                                                                                                                                                                                              |  |        |  |                                                                 |  |       |  |  |  |
| k hat (MLE)                                                                                                                                                                                                   |  | 5.431  |  | k star (bias corrected MLE)                                     |  | 3.868 |  |  |  |
| Theta hat (MLE)                                                                                                                                                                                               |  | 12.68  |  | Theta star (bias corrected MLE)                                 |  | 17.8  |  |  |  |
| nu hat (MLE)                                                                                                                                                                                                  |  | 108.6  |  | nu star (bias corrected)                                        |  | 77.36 |  |  |  |
| MLE Mean (bias corrected)                                                                                                                                                                                     |  | 68.86  |  | MLE Sd (bias corrected)                                         |  | 35.01 |  |  |  |
|                                                                                                                                                                                                               |  |        |  | Approximate Chi Square Value (0.05)                             |  | 58.1  |  |  |  |
| Adjusted Level of Significance                                                                                                                                                                                |  | 0.0267 |  | Adjusted Chi Square Value                                       |  | 55.21 |  |  |  |
| Assuming Gamma Distribution                                                                                                                                                                                   |  |        |  |                                                                 |  |       |  |  |  |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                                   |  | 91.69  |  | 95% Adjusted Gamma UCL (use when n<50)                          |  | 96.49 |  |  |  |
| Lognormal GOF Test                                                                                                                                                                                            |  |        |  |                                                                 |  |       |  |  |  |
| Shapiro Wilk Test Statistic                                                                                                                                                                                   |  | 0.913  |  | Shapiro Wilk Lognormal GOF Test                                 |  |       |  |  |  |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                                |  | 0.842  |  | Data appear Lognormal at 5% Significance Level                  |  |       |  |  |  |
| Lilliefors Test Statistic                                                                                                                                                                                     |  | 0.19   |  | Lilliefors Lognormal GOF Test                                   |  |       |  |  |  |
| 5% Lilliefors Critical Value                                                                                                                                                                                  |  | 0.262  |  | Data appear Lognormal at 5% Significance Level                  |  |       |  |  |  |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                                |  |        |  |                                                                 |  |       |  |  |  |
| Lognormal Statistics                                                                                                                                                                                          |  |        |  |                                                                 |  |       |  |  |  |
| Minimum of Logged Data                                                                                                                                                                                        |  | 3.584  |  | Mean of logged Data                                             |  | 4.137 |  |  |  |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                  |                                  |                                                |                   |        |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------|--------|-------|
| Maximum of Logged Data                                                                                                                                                                           |                                  | 4.844                                          | SD of logged Data |        | 0.452 |
| Assuming Lognormal Distribution                                                                                                                                                                  |                                  |                                                |                   |        |       |
| 95% H-UCL                                                                                                                                                                                        | 96                               | 90% Chebyshev (MVUE) UCL                       |                   | 98.49  |       |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                         | 112                              | 97.5% Chebyshev (MVUE) UCL                     |                   | 130.8  |       |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                         | 167.7                            |                                                |                   |        |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                   |                                  |                                                |                   |        |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                        |                                  |                                                |                   |        |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                             |                                  |                                                |                   |        |       |
| 95% CLT UCL                                                                                                                                                                                      | 85.85                            | 95% Jackknife UCL                              |                   | 87.8   |       |
| 95% Standard Bootstrap UCL                                                                                                                                                                       | 84.69                            | 95% Bootstrap-t UCL                            |                   | 95.66  |       |
| 95% Hall's Bootstrap UCL                                                                                                                                                                         | 93.47                            | 95% Percentile Bootstrap UCL                   |                   | 85.85  |       |
| 95% BCA Bootstrap UCL                                                                                                                                                                            | 90.28                            |                                                |                   |        |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                      | 99.85                            | 95% Chebyshev(Mean, Sd) UCL                    |                   | 113.9  |       |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                    | 133.4                            | 99% Chebyshev(Mean, Sd) UCL                    |                   | 171.7  |       |
| Suggested UCL to Use                                                                                                                                                                             |                                  |                                                |                   |        |       |
| 95% Student's-t UCL                                                                                                                                                                              | 87.8                             |                                                |                   |        |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                     |                                  |                                                |                   |        |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                       |                                  |                                                |                   |        |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                         |                                  |                                                |                   |        |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                        |                                  |                                                |                   |        |       |
| result (/uc_toluene_108-88-3)                                                                                                                                                                    |                                  |                                                |                   |        |       |
| General Statistics                                                                                                                                                                               |                                  |                                                |                   |        |       |
| Total Number of Observations                                                                                                                                                                     | 3                                | Number of Distinct Observations                |                   | 3      |       |
|                                                                                                                                                                                                  |                                  | Number of Missing Observations                 |                   | 0      |       |
| Minimum                                                                                                                                                                                          | 0.416                            | Mean                                           |                   | 6.802  |       |
| Maximum                                                                                                                                                                                          | 12.2                             | Median                                         |                   | 7.79   |       |
| SD                                                                                                                                                                                               | 5.954                            | Std. Error of Mean                             |                   | 3.437  |       |
| Coefficient of Variation                                                                                                                                                                         | 0.875                            | Skewness                                       |                   | -0.726 |       |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |                                  |                                                |                   |        |       |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |                                  |                                                |                   |        |       |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |                                  |                                                |                   |        |       |
| Normal GOF Test                                                                                                                                                                                  |                                  |                                                |                   |        |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.979                            | Shapiro Wilk GOF Test                          |                   |        |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.767                            | Data appear Normal at 5% Significance Level    |                   |        |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.233                            | Lilliefors GOF Test                            |                   |        |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.425                            | Data appear Normal at 5% Significance Level    |                   |        |       |
| Data appear Normal at 5% Significance Level                                                                                                                                                      |                                  |                                                |                   |        |       |
| Assuming Normal Distribution                                                                                                                                                                     |                                  |                                                |                   |        |       |
| 95% Normal UCL                                                                                                                                                                                   | 95% UCLs (Adjusted for Skewness) |                                                |                   |        |       |
| 95% Student's-t UCL                                                                                                                                                                              | 16.84                            | 95% Adjusted-CLT UCL (Chen-1995)               |                   | 10.92  |       |
|                                                                                                                                                                                                  |                                  | 95% Modified-t UCL (Johnson-1978)              |                   | 16.6   |       |
| Gamma GOF Test                                                                                                                                                                                   |                                  |                                                |                   |        |       |
| Not Enough Data to Perform GOF Test                                                                                                                                                              |                                  |                                                |                   |        |       |
| Gamma Statistics                                                                                                                                                                                 |                                  |                                                |                   |        |       |
| k hat (MLE)                                                                                                                                                                                      | 0.851                            | k star (bias corrected MLE)                    |                   | N/A    |       |
| Theta hat (MLE)                                                                                                                                                                                  | 7.989                            | Theta star (bias corrected MLE)                |                   | N/A    |       |
| nu hat (MLE)                                                                                                                                                                                     | 5.108                            | nu star (bias corrected)                       |                   | N/A    |       |
| MLE Mean (bias corrected)                                                                                                                                                                        | N/A                              | MLE Sd (bias corrected)                        |                   | N/A    |       |
|                                                                                                                                                                                                  |                                  | Approximate Chi Square Value (0.05)            |                   | N/A    |       |
| Adjusted Level of Significance                                                                                                                                                                   | N/A                              | Adjusted Chi Square Value                      |                   | N/A    |       |
| Assuming Gamma Distribution                                                                                                                                                                      |                                  |                                                |                   |        |       |
| 95% Approximate Gamma UCL (use when n>=50))                                                                                                                                                      | N/A                              | 95% Adjusted Gamma UCL (use when n<50)         |                   | N/A    |       |
| Lognormal GOF Test                                                                                                                                                                               |                                  |                                                |                   |        |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.848                            | Shapiro Wilk Lognormal GOF Test                |                   |        |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.767                            | Data appear Lognormal at 5% Significance Level |                   |        |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.341                            | Lilliefors Lognormal GOF Test                  |                   |        |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.425                            | Data appear Lognormal at 5% Significance Level |                   |        |       |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                   |                                  |                                                |                   |        |       |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

| Lognormal Statistics                                                                                                                                                                                          |           |                              |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------|-------|
| Minimum of Logged Data                                                                                                                                                                                        | -0.877    | Mean of logged Data          | 1.226 |
| Maximum of Logged Data                                                                                                                                                                                        | 2.501     | SD of logged Data            | 1.835 |
| Assuming Lognormal Distribution                                                                                                                                                                               |           |                              |       |
| 95% H-UCL                                                                                                                                                                                                     | 5.959E+14 | 90% Chebyshev (MVUE) UCL     | 28.02 |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 36.88     | 97.5% Chebyshev (MVUE) UCL   | 49.19 |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                                      | 73.36     |                              |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                                |           |                              |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                                     |           |                              |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                                          |           |                              |       |
| 95% CLT UCL                                                                                                                                                                                                   | 12.46     | 95% Jackknife UCL            | 16.84 |
| 95% Standard Bootstrap UCL                                                                                                                                                                                    | N/A       | 95% Bootstrap-t UCL          | N/A   |
| 95% Hall's Bootstrap UCL                                                                                                                                                                                      | N/A       | 95% Percentile Bootstrap UCL | N/A   |
| 95% BCA Bootstrap UCL                                                                                                                                                                                         | N/A       |                              |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                   | 17.11     | 95% Chebyshev(Mean, Sd) UCL  | 21.79 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                                 | 28.27     | 99% Chebyshev(Mean, Sd) UCL  | 41    |
| Suggested UCL to Use                                                                                                                                                                                          |           |                              |       |
| 95% Student's-t UCL                                                                                                                                                                                           | 16.84     |                              |       |
| Recommended UCL exceeds the maximum observation                                                                                                                                                               |           |                              |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                                  |           |                              |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                                    |           |                              |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                                      |           |                              |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                                     |           |                              |       |
| Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets. |           |                              |       |

result (l/uc\_trichloroethylene\_79-01-6)

| General Statistics                                              |        |                                                                 |       |
|-----------------------------------------------------------------|--------|-----------------------------------------------------------------|-------|
| Total Number of Observations                                    | 10     | Number of Distinct Observations                                 | 10    |
|                                                                 |        | Number of Missing Observations                                  | 0     |
| Minimum                                                         | 8.56   | Mean                                                            | 22.14 |
| Maximum                                                         | 37.1   | Median                                                          | 19.55 |
| SD                                                              | 10.69  | Std. Error of Mean                                              | 3.381 |
| Coefficient of Variation                                        | 0.483  | Skewness                                                        | 0.151 |
| Normal GOF Test                                                 |        |                                                                 |       |
| Shapiro Wilk Test Statistic                                     | 0.903  | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                  | 0.842  | Data appear Normal at 5% Significance Level                     |       |
| Lilliefors Test Statistic                                       | 0.209  | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                    | 0.262  | Data appear Normal at 5% Significance Level                     |       |
| Data appear Normal at 5% Significance Level                     |        |                                                                 |       |
| Assuming Normal Distribution                                    |        |                                                                 |       |
| 95% Normal UCL                                                  |        | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                             | 28.33  | 95% Adjusted-CLT UCL (Chen-1995)                                | 27.87 |
|                                                                 |        | 95% Modified-t UCL (Johnson-1978)                               | 28.36 |
| Gamma GOF Test                                                  |        |                                                                 |       |
| A-D Test Statistic                                              | 0.408  | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                           | 0.729  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                              | 0.224  | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                           | 0.268  | Detected data appear Gamma Distributed at 5% Significance Level |       |
| Detected data appear Gamma Distributed at 5% Significance Level |        |                                                                 |       |
| Gamma Statistics                                                |        |                                                                 |       |
| k hat (MLE)                                                     | 4.28   | k star (bias corrected MLE)                                     | 3.063 |
| Theta hat (MLE)                                                 | 5.172  | Theta star (bias corrected MLE)                                 | 7.228 |
| nu hat (MLE)                                                    | 85.6   | nu star (bias corrected)                                        | 61.25 |
| MLE Mean (bias corrected)                                       | 22.14  | MLE Sd (bias corrected)                                         | 12.65 |
|                                                                 |        | Approximate Chi Square Value (0.05)                             | 44.25 |
| Adjusted Level of Significance                                  | 0.0267 | Adjusted Chi Square Value                                       | 41.75 |
| Assuming Gamma Distribution                                     |        |                                                                 |       |
| 95% Approximate Gamma UCL (use when n>=50))                     | 30.64  | 95% Adjusted Gamma UCL (use when n<50)                          | 32.47 |
| Lognormal GOF Test                                              |        |                                                                 |       |



TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                                                                                  |       |       |                                                                 |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-----------------------------------------------------------------|-------|
| Shapiro Wilk Test Statistic                                                                                                                                                                      |       | 0.907 | Shapiro Wilk Lognormal GOF Test                                 |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.842 |       | Data appear Lognormal at 5% Significance Level                  |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.21  |       | Lilliefors Lognormal GOF Test                                   |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.262 |       | Data appear Lognormal at 5% Significance Level                  |       |
| Data appear Lognormal at 5% Significance Level                                                                                                                                                   |       |       |                                                                 |       |
| Lognormal Statistics                                                                                                                                                                             |       |       |                                                                 |       |
| Minimum of Logged Data                                                                                                                                                                           | 2.147 |       | Mean of logged Data                                             | 2.976 |
| Maximum of Logged Data                                                                                                                                                                           | 3.614 |       | SD of logged Data                                               | 0.54  |
| Assuming Lognormal Distribution                                                                                                                                                                  |       |       |                                                                 |       |
| 95% H-UCL                                                                                                                                                                                        | 34.2  |       | 90% Chebyshev (MVUE) UCL                                        | 34.01 |
| 95% Chebyshev (MVUE) UCL                                                                                                                                                                         | 39.3  |       | 97.5% Chebyshev (MVUE) UCL                                      | 46.64 |
| 99% Chebyshev (MVUE) UCL                                                                                                                                                                         | 61.07 |       |                                                                 |       |
| Nonparametric Distribution Free UCL Statistics                                                                                                                                                   |       |       |                                                                 |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                                                                        |       |       |                                                                 |       |
| Nonparametric Distribution Free UCLs                                                                                                                                                             |       |       |                                                                 |       |
| 95% CLT UCL                                                                                                                                                                                      | 27.7  |       | 95% Jackknife UCL                                               | 28.33 |
| 95% Standard Bootstrap UCL                                                                                                                                                                       | 27.31 |       | 95% Bootstrap-t UCL                                             | 28.69 |
| 95% Hall's Bootstrap UCL                                                                                                                                                                         | 26.95 |       | 95% Percentile Bootstrap UCL                                    | 27.62 |
| 95% BCA Bootstrap UCL                                                                                                                                                                            | 27.7  |       |                                                                 |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                                                                                      | 32.28 |       | 95% Chebyshev(Mean, Sd) UCL                                     | 36.87 |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                                                                                    | 43.25 |       | 99% Chebyshev(Mean, Sd) UCL                                     | 55.78 |
| Suggested UCL to Use                                                                                                                                                                             |       |       |                                                                 |       |
| 95% Student's-t UCL                                                                                                                                                                              | 28.33 |       |                                                                 |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.                                                                     |       |       |                                                                 |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                                                                       |       |       |                                                                 |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                                                                         |       |       |                                                                 |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.                                                        |       |       |                                                                 |       |
| result (/uc_vinyl chloride_75-01-4)                                                                                                                                                              |       |       |                                                                 |       |
| General Statistics                                                                                                                                                                               |       |       |                                                                 |       |
| Total Number of Observations                                                                                                                                                                     | 8     |       | Number of Distinct Observations                                 | 8     |
|                                                                                                                                                                                                  |       |       | Number of Missing Observations                                  | 0     |
| Minimum                                                                                                                                                                                          | 0.373 |       | Mean                                                            | 2.206 |
| Maximum                                                                                                                                                                                          | 7.98  |       | Median                                                          | 1.745 |
| SD                                                                                                                                                                                               | 2.426 |       | Std. Error of Mean                                              | 0.858 |
| Coefficient of Variation                                                                                                                                                                         | 1.1   |       | Skewness                                                        | 2.398 |
| Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. |       |       |                                                                 |       |
| For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).                                                                                                                     |       |       |                                                                 |       |
| Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1                                                                                                          |       |       |                                                                 |       |
| Normal GOF Test                                                                                                                                                                                  |       |       |                                                                 |       |
| Shapiro Wilk Test Statistic                                                                                                                                                                      | 0.665 |       | Shapiro Wilk GOF Test                                           |       |
| 5% Shapiro Wilk Critical Value                                                                                                                                                                   | 0.818 |       | Data Not Normal at 5% Significance Level                        |       |
| Lilliefors Test Statistic                                                                                                                                                                        | 0.407 |       | Lilliefors GOF Test                                             |       |
| 5% Lilliefors Critical Value                                                                                                                                                                     | 0.283 |       | Data Not Normal at 5% Significance Level                        |       |
| Data Not Normal at 5% Significance Level                                                                                                                                                         |       |       |                                                                 |       |
| Assuming Normal Distribution                                                                                                                                                                     |       |       |                                                                 |       |
| 95% Normal UCL                                                                                                                                                                                   |       |       | 95% UCLs (Adjusted for Skewness)                                |       |
| 95% Student's-t UCL                                                                                                                                                                              | 3.83  |       | 95% Adjusted-CLT UCL (Chen-1995)                                | 4.393 |
|                                                                                                                                                                                                  |       |       | 95% Modified-t UCL (Johnson-1978)                               | 3.952 |
| Gamma GOF Test                                                                                                                                                                                   |       |       |                                                                 |       |
| A-D Test Statistic                                                                                                                                                                               | 0.629 |       | Anderson-Darling Gamma GOF Test                                 |       |
| 5% A-D Critical Value                                                                                                                                                                            | 0.731 |       | Detected data appear Gamma Distributed at 5% Significance Level |       |
| K-S Test Statistic                                                                                                                                                                               | 0.301 |       | Kolmogorov-Smirnov Gamma GOF Test                               |       |
| 5% K-S Critical Value                                                                                                                                                                            | 0.3   |       | Data Not Gamma Distributed at 5% Significance Level             |       |
| Detected data follow Appr. Gamma Distribution at 5% Significance Level                                                                                                                           |       |       |                                                                 |       |
| Gamma Statistics                                                                                                                                                                                 |       |       |                                                                 |       |
| k hat (MLE)                                                                                                                                                                                      | 1.341 |       | k star (bias corrected MLE)                                     | 0.921 |
| Theta hat (MLE)                                                                                                                                                                                  | 1.645 |       | Theta star (bias corrected MLE)                                 | 2.394 |
| nu hat (MLE)                                                                                                                                                                                     | 21.45 |       | nu star (bias corrected)                                        | 14.74 |
| MLE Mean (bias corrected)                                                                                                                                                                        | 2.206 |       | MLE Sd (bias corrected)                                         | 2.298 |
|                                                                                                                                                                                                  |       |       | Approximate Chi Square Value (0.05)                             | 7.083 |

TABLE D.12  
PROUCL 5.1 RAW OUTPUT FOR GROUNDWATER - CORE OF THE PLUME - INTERMEDIATE AQUIFER  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

|                                                                                                                                           |        |                                                |                           |       |       |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------|---------------------------|-------|-------|
| Adjusted Level of Significance                                                                                                            |        | 0.0195                                         | Adjusted Chi Square Value |       | 5.794 |
| Assuming Gamma Distribution                                                                                                               |        |                                                |                           |       |       |
| 95% Approximate Gamma UCL (use when n>=50)                                                                                                | 4.591  | 95% Adjusted Gamma UCL (use when n<50)         |                           | 5.613 |       |
| Lognormal GOF Test                                                                                                                        |        |                                                |                           |       |       |
| Shapiro Wilk Test Statistic                                                                                                               | 0.882  | Shapiro Wilk Lognormal GOF Test                |                           |       |       |
| 5% Shapiro Wilk Critical Value                                                                                                            | 0.818  | Data appear Lognormal at 5% Significance Level |                           |       |       |
| Lilliefors Test Statistic                                                                                                                 | 0.246  | Lilliefors Lognormal GOF Test                  |                           |       |       |
| 5% Lilliefors Critical Value                                                                                                              | 0.283  | Data appear Lognormal at 5% Significance Level |                           |       |       |
| Data appear Lognormal at 5% Significance Level                                                                                            |        |                                                |                           |       |       |
| Lognormal Statistics                                                                                                                      |        |                                                |                           |       |       |
| Minimum of Logged Data                                                                                                                    | -0.986 | Mean of logged Data                            |                           | 0.374 |       |
| Maximum of Logged Data                                                                                                                    | 2.077  | SD of logged Data                              |                           | 0.982 |       |
| Assuming Lognormal Distribution                                                                                                           |        |                                                |                           |       |       |
| 95% H-UCL                                                                                                                                 | 8.251  | 90% Chebyshev (MVUE) UCL                       |                           | 4.49  |       |
| 95% Chebyshev (MVUE) UCL                                                                                                                  | 5.538  | 97.5% Chebyshev (MVUE) UCL                     |                           | 6.993 |       |
| 99% Chebyshev (MVUE) UCL                                                                                                                  | 9.85   |                                                |                           |       |       |
| Nonparametric Distribution Free UCL Statistics                                                                                            |        |                                                |                           |       |       |
| Data appear to follow a Discernible Distribution at 5% Significance Level                                                                 |        |                                                |                           |       |       |
| Nonparametric Distribution Free UCLs                                                                                                      |        |                                                |                           |       |       |
| 95% CLT UCL                                                                                                                               | 3.616  | 95% Jackknife UCL                              |                           | 3.83  |       |
| 95% Standard Bootstrap UCL                                                                                                                | 3.531  | 95% Bootstrap-t UCL                            |                           | 5.987 |       |
| 95% Hall's Bootstrap UCL                                                                                                                  | 10.17  | 95% Percentile Bootstrap UCL                   |                           | 3.627 |       |
| 95% BCA Bootstrap UCL                                                                                                                     | 4.654  |                                                |                           |       |       |
| 90% Chebyshev(Mean, Sd) UCL                                                                                                               | 4.778  | 95% Chebyshev(Mean, Sd) UCL                    |                           | 5.944 |       |
| 97.5% Chebyshev(Mean, Sd) UCL                                                                                                             | 7.561  | 99% Chebyshev(Mean, Sd) UCL                    |                           | 10.74 |       |
| Suggested UCL to Use                                                                                                                      |        |                                                |                           |       |       |
| 95% Adjusted Gamma UCL                                                                                                                    | 5.613  |                                                |                           |       |       |
| When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test                                            |        |                                                |                           |       |       |
| When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL                    |        |                                                |                           |       |       |
| Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.              |        |                                                |                           |       |       |
| Recommendations are based upon data size, data distribution, and skewness.                                                                |        |                                                |                           |       |       |
| These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).                  |        |                                                |                           |       |       |
| However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician. |        |                                                |                           |       |       |



TABLE D.13  
PROUCL 5.1 RAW INPUT FOR GROUNDWATER - CORE OF THE PLUME  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
MAIN INSTALLATION - DEFENSE DEPOT MEMPHIS, TENNESSEE

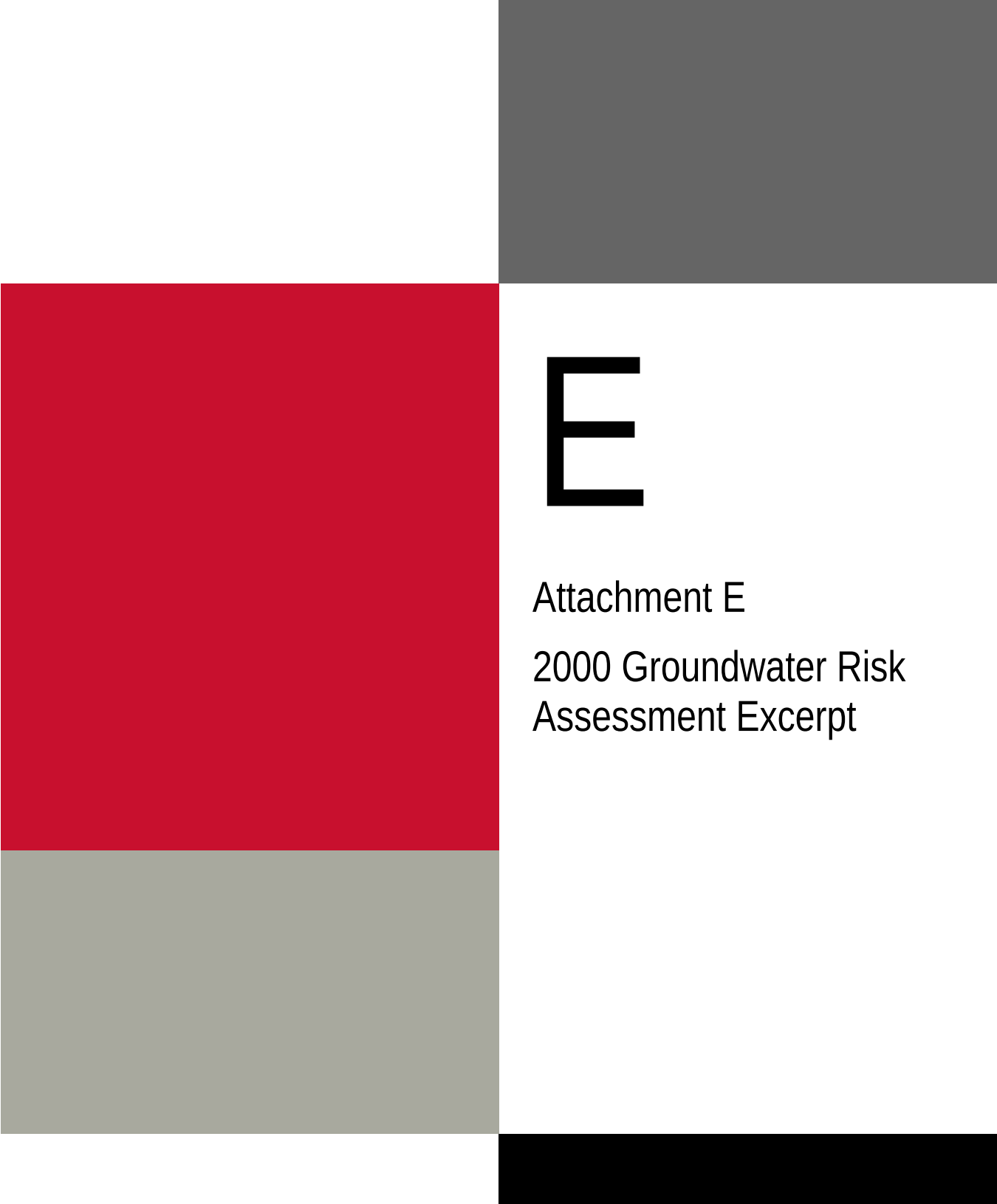
**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the "Core of the Plume" evaluation in the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                             | ProUCL Result (ug/L) | ProUCL Flag | Location  | Sample ID                           | Sample Type | Sample Date | Analysis Date | Analytical Method   | T or D | COPC Group | COPC                      | CASRN    | Qualifier | Detection Limit (ug/L) |
|------------------------------------------|----------------------|-------------|-----------|-------------------------------------|-------------|-------------|---------------|---------------------|--------|------------|---------------------------|----------|-----------|------------------------|
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2.19                 | 1           | MW-218    | MW-218_MW-218-LB-16_20121021        | SAMP        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 2.4                  | 1           | MW-218    | MW-218_MW-218-LS-15_20120423        | SAMP        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1.57                 | 1           | MW-64     | MW-64_MW-64-LA-18_20131012          | SAMP        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  | J         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.704                | 1           | MW-64     | MW-64_MW-64-LS-17_20130410          | SAMP        | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1.46                 | 1           | MW-204B   | MW-204B_MW-204B-LA-18_20131011      | SAMP        | 10/11/2013  | 10/11/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  | J         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.999                | 1           | MW-204B   | MW-204B_MW-204B-LB-20_20141020      | SAMP        | 10/20/2014  | 10/20/2014    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 1.1                  | 1           | MW-217    | MW-217_MW-217-LA-18_20131012        | SAMP        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  | J         | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.988                | 1           | MW-217    | MW-217_MW-217-LB-16_20121021        | RS02        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.988                | 1           | MW-267    | MW-267_MW-267-LS-23_20160421        | SAMP        | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1,2,2-Tetrachloroethane_79-34-5 | 0.989                | 1           | MW-267    | MW-267_MW-267-LB-24_20161015        | SAMP        | 10/15/2016  | 10/15/2016    | 8260B5030B/5030C/50 | T      | VOC        | 1,1,2,2-Tetrachloroethane | 79-34-5  |           | 0.2                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 13.6                 | 1           | MW-263    | MW-263_MW-263-LA-22_20151007        | SAMP        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 12.6                 | 1           | MW-263    | MW-263_MW-263-LS-23_20160422        | RS03        | 4/22/2016   | 4/22/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 4.24                 | 1           | MW-281    | MW-281_MW-281-LS-25_20170421        | SAMP        | 4/21/2017   | 4/21/2017     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 3.2                  | 1           | MW-281    | MW-281_MW-281-SR1216_20161209       | SAMP        | 12/9/2016   | 12/9/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 4.08                 | 1           | MW-104    | MW-104_MW-104-LA-22_20151006        | SAMP        | 10/6/2015   | 10/6/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 3.23                 | 1           | MW-104    | MW-104_MW-104-LA-18_20131012        | SAMP        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 2.43                 | 1           | MW-103    | MW-103_MW-103-LA-22_20151007        | SAMP        | 10/7/2015   | 10/7/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 2.25                 | 1           | MW-103    | MW-103_MW-103-LA-18_20131012        | SAMP        | 10/12/2013  | 10/12/2013    | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 2.29                 | 1           | MW-260    | MW-260_MW-260-LS-21_20150410        | SAMP        | 4/10/2015   | 4/10/2015     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,1-Dichloroethene_75-35-4        | 2.08                 | 1           | MW-260    | MW-260_MW-260-LS-19_20140425        | SAMP        | 4/25/2014   | 4/25/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene        | 75-35-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 83.3                 | 1           | PMW92-06  | PMW92-06_PMW92-06-LS-15_20120421    | SAMP        | 4/21/2012   | 4/21/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 62.7                 | 1           | PMW85-05  | PMW85-05_PMW85-05-LB-16_20121022    | SAMP        | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 55.7                 | 1           | PMW85-05  | PMW85-05_PMW85-05-EBT-15_20140210   | SAMP        | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 19.7                 | 1           | DR2-6     | DR2-6_DR2-6-LB-16_20121021          | RS01        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 15.1                 | 1           | DR2-6     | DR2-6_DR2-6-LS-15_20120423          | SAMP        | 4/23/2012   | 4/23/2012     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 19.4                 | 1           | DR2-5     | DR2-5_DR2-5-LB-16_20121019          | SAMP        | 10/19/2012  | 10/19/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 16.2                 | 1           | DR2-5     | DR2-5_DR2-5-EBT-12_20130508         | SAMP        | 5/8/2013    | 5/8/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 11.1                 | 1           | PMW85-01  | PMW85-01_PMW85-01-EBT-17_20140811   | SAMP        | 8/11/2014   | 8/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,3-Trichloropropane_96-18-4    | 10.1                 | 1           | PMW85-01  | PMW85-01_PMW85-01-LS-23_20160421    | SAMP        | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,3-Trichloropropane    | 96-18-4  |           | 0.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 142                  | 1           | IW21-02B  | IW21-02B_IW21-02B-EBT-12_20130510   | SAMP        | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  |           | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 3.91                 | 1           | IW21-02B  | IW21-02B_IW21-02B-EBT-13_20130817   | SAMP        | 8/17/2013   | 8/17/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  | J         | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 70.2                 | 1           | IW21-02A  | IW21-02A_IW21-02A-EBT-12_20130510   | SAMP        | 5/10/2013   | 5/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  |           | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 6.24                 | 1           | IW21-02A  | IW21-02A_IW21-02A-EBT-14_20131108   | SAMP        | 11/8/2013   | 11/8/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  |           | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 44.4                 | 1           | IW92-01   | IW92-01_IW92-01-EBT-14_20131106     | SAMP        | 11/6/2013   | 11/6/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  |           | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 8.29                 | 1           | IW92-01   | IW92-01_IW92-01-EBT-15_20140210     | SAMP        | 2/10/2014   | 2/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  | J         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 43.1                 | 1           | IW21-01A  | IW21-01A_IW21-01A-EBT-12_20130507   | SAMP        | 5/7/2013    | 5/7/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  |           | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 11.8                 | 1           | IW21-01A  | IW21-01A_IW21-01A-EBT-14_20131107   | SAMP        | 11/7/2013   | 11/7/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  |           | 1.25                   |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 34.2                 | 1           | IW101-07C | IW101-07C_IW101-07C-EBT-14_20131109 | SAMP        | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  | J         | 2.5                    |
| Fluval_1,2,4-Trimethylbenzene_95-63-6    | 6.76                 | 1           | IW101-07C | IW101-07C_IW101-07C-EBT-13_20130816 | SAMP        | 8/16/2013   | 8/16/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene    | 95-63-6  | J         | 2.5                    |
| Fluval_1,2-Dichloroethane_107-06-2       | 14.7                 | 1           | IW92-03   | IW92-03_IW92-03-EBT-16_20140512     | SAMP        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane        | 107-06-2 |           | 2.5                    |
| Fluval_1,2-Dichloroethane_107-06-2       | 12.5                 | 1           | IW92-01   | IW92-01_IW92-01-EBT-16_20140512     | SAMP        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane        | 107-06-2 | J         | 2.5                    |
| Fluval_1,2-Dichloroethane_107-06-2       | 9.78                 | 1           | IW85-06   | IW85-06_IW85-06-EBT-16_20140512     | SAMP        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane        | 107-06-2 | J         | 2.5                    |
| Fluval_1,2-Dichloroethane_107-06-2       | 6.8                  | 1           | PMW92-03  | PMW92-03_PMW92-03-EBT-16_20140511   | SAMP        | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane        | 107-06-2 | J         | 2.5                    |
| Fluval_1,2-Dichloroethane_107-06-2       | 5.32                 | 1           | MW-64     | MW-64_MW-64-LB-16_20121021          | SAMP        | 10/21/2012  | 10/21/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane        | 107-06-2 |           | 0.25                   |
| Fluval_1,2-Dichloroethane_107-06-2       | 0.583                | 1           | MW-64     | MW-64_MW-64-LS-17_20130410          | SAMP        | 4/10/2013   | 4/10/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloroethane        | 107-06-2 |           | 0.25                   |
| Fluval_1,2-Dichloropropane_78-87-5       | 44                   | 1           | IW92-01   | IW92-01_IW92-01-EBT-16_20140512     | SAMP        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | J         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5       | 25.6                 | 1           | IW92-07   | IW92-07_IW92-07-EBT-16_20140513     | SAMP        | 5/13/2014   | 5/13/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | J         | 5                      |
| Fluval_1,2-Dichloropropane_78-87-5       | 15.3                 | 1           | PMW92-03  | PMW92-03_PMW92-03-EBT-16_20140511   | SAMP        | 5/11/2014   | 5/11/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | J         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5       | 0.21                 | 1           | PMW92-03  | PMW92-03_PMW92-03-LB-16_20121022    | SAMP        | 10/22/2012  | 10/22/2012    | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | J         | 0.2                    |
| Fluval_1,2-Dichloropropane_78-87-5       | 7.2                  | 1           | IW92-03   | IW92-03_IW92-03-EBT-16_20140512     | SAMP        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | J         | 2                      |
| Fluval_1,2-Dichloropropane_78-87-5       | 4.11                 | 1           | IW92-08   | IW92-08_IW92-08-EBT-11_20130211     | SAMP        | 2/11/2013   | 2/11/2013     | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  | J         | 1                      |
| Fluval_1,2-Dichloropropane_78-87-5       | 4                    | 1           | IW92-08   | IW92-08_IW92-08-EBT-12_20130509     | SAMP        | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane       | 78-87-5  |           | 0.2                    |
| Fluval_Acetone_67-64-1                   | 7790                 | 1           | IW101-04C | IW101-04C_IW101-04C-EBT-12_20130509 | SAMP        | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  |           | 250                    |
| Fluval_Acetone_67-64-1                   | 2870                 | 1           | IW101-04C | IW101-04C_IW101-04C-EBT-16_20140510 | SAMP        | 5/10/2014   | 5/10/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  | JB        | 125                    |
| Fluval_Acetone_67-64-1                   | 5650                 | 1           | IW101-03C | IW101-03C_IW101-03C-EBT-14_20131110 | SAMP        | 11/10/2013  | 11/10/2013    | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  | JB        | 625                    |
| Fluval_Acetone_67-64-1                   | 1360                 | 1           | IW101-03C | IW101-03C_IW101-03C-EBT-17_20140809 | SAMP        | 8/9/2014    | 8/9/2014      | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  | J         | 250                    |
| Fluval_Acetone_67-64-1                   | 5220                 | 1           | IW101-07C | IW101-07C_IW101-07C-EBT-12_20130509 | SAMP        | 5/9/2013    | 5/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  |           | 250                    |
| Fluval_Acetone_67-64-1                   | 1220                 | 1           | IW101-07C | IW101-07C_IW101-07C-EBT-14_20131109 | SAMP        | 11/9/2013   | 11/9/2013     | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  | J         | 25                     |
| Fluval_Acetone_67-64-1                   | 5070                 | 1           | IW92-03   | IW92-03_IW92-03-EBT-16_20140512     | SAMP        | 5/12/2014   | 5/12/2014     | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  | B         | 5000                   |
| Fluval_Acetone_67-64-1                   | 1860                 | 1           | IW92-03   | IW92-03_IW92-03-EBT-11_20130209     | SAMP        | 2/9/2013    | 2/9/2013      | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  |           | 125                    |
| Fluval_Acetone_67-64-1                   | 3860                 | 1           | DR2-5     | DR2-5_DR2-5-LS-23_20160421          | SAMP        | 4/21/2016   | 4/21/2016     | 8260B5030B/5030C/50 | T      | VOC        | Acetone                   | 67-64-1  |           | 250                    |
| Fluval_Acetone_67-64-1                   | 2960                 | 1           | DR2-5     | DR2-5_DR2-5-LB-24_20161017          |             |             |               |                     |        |            |                           |          |           |                        |



**Notes:**  
The data set provided here are for constituents of potential concern (COPCs) that were determined in the initial screening to calculate 95% upper confidence limits (UCLs) using USEPA ProUCL software for the "Core of the Plume" evaluation in the risk assessment. This is not a complete data set.  
The maximum of the field duplicate and parent sample results was applied.  
The detection limit is the method detection limit if available; otherwise, it is the reporting limit.

| ProUCL Group                                 | ProUCL Result (ug/L) | ProUCL Flag | Location | Sample ID                       | Sample Type | Sample Date | Analysis Date | Analytical Method    | T or D | COPC Group | COPC                             | CASRN     | Qualifier | Detection Limit (ug/L) |
|----------------------------------------------|----------------------|-------------|----------|---------------------------------|-------------|-------------|---------------|----------------------|--------|------------|----------------------------------|-----------|-----------|------------------------|
| JUC_1,1-Dichloroethene_75-35-4               | 0.947                | 1           | MW-90    | MW-90_MW90-LA-22_20151007       | SAMP        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene               | 75-35-4   | J         | 0.5                    |
| JUC_1,1-Dichloroethene_75-35-4               | 0.931                | 1           | MW-90    | MW-90_MW90-LS-21_20150409       | SAMP        | 4/9/2015    | 4/9/2015      | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene               | 75-35-4   | J         | 0.5                    |
| JUC_1,1-Dichloroethene_75-35-4               | 0.643                | 1           | MW-256   | MW-256_MW-256-LS-25_20170421    | SAMP        | 4/21/2017   | 4/21/2017     | 8260B/5030B/5030C/50 | T      | VOC        | 1,1-Dichloroethene               | 75-35-4   | J         | 0.5                    |
| JUC_1,2,4-Trimethylbenzene_95-63-6           | 2.21                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-14_20131107 | SAMP        | 11/7/2013   | 11/7/2013     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2,4-Trimethylbenzene           | 95-63-6   | J         | 1.25                   |
| JUC_1,2-Dichloropropane_78-87-5              | 0.232                | 1           | MW-256   | MW-256_MW-256-LS-23_20160423    | SAMP        | 4/23/2016   | 4/23/2016     | 8260B/5030B/5030C/50 | T      | VOC        | 1,2-Dichloropropane              | 78-87-5   | J         | 0.2                    |
| JUC_Acetone_67-64-1                          | 1210                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-16_20140510 | SAMP        | 5/10/2014   | 5/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 25                     |
| JUC_Acetone_67-64-1                          | 961                  | 1           | MW-203A  | MW-203A_MW-203A-EBT-12_20130509 | SAMP        | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 50                     |
| JUC_Acetone_67-64-1                          | 60                   | 1           | MW-253   | MW-253_MW-253-LB-24_20161013    | SAMP        | 10/13/2016  | 10/13/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 10.7                 | 1           | MW-253   | MW-253_MW-253-LB-20_20141019    | SAMP        | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 43.2                 | 1           | MW-108   | MW-108_MW-108-LB-20_20141020    | SAMP        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 30                   | 1           | MW-108   | MW-108_MW-108-LS-23_20160422    | SAMP        | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 30.7                 | 1           | MW-207A  | MW-207A_MW-207A-LB-20_20141020  | SAMP        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 31.7                 | 1           | MW-207A  | MW-207A_MW-207A-LS-19_20140425  | SAMP        | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 37.8                 | 1           | MW-205A  | MW-205A_MW-205A-LS-19_20140425  | SAMP        | 4/25/2014   | 4/25/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Acetone_67-64-1                          | 25.1                 | 1           | MW-205A  | MW-205A_MW-205A-LB-24_20161014  | SAMP        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Acetone                          | 67-64-1   | J         | 2.5                    |
| JUC_Carbon tetrachloride_56-23-5             | 1.19                 | 1           | MW-214B  | MW-214B_MW-214B-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 1.01                 | 1           | MW-214B  | MW-214B_MW-214B-LA-18_20131012  | SAMP        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 1.1                  | 1           | MW-214A  | MW-214A_MW-214A-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 1.09                 | 1           | MW-214A  | MW-214A_MW-214A-LA-18_20131012  | SAMP        | 10/12/2013  | 10/12/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 1.09                 | 1           | MW-215A  | MW-215A_MW-215A-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 1.06                 | 1           | MW-215A  | MW-215A_MW-215A-LA-22_20151008  | SAMP        | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 0.966                | 1           | MW-107B  | MW-107B_MW-107B-LS-15_20120423  | SAMP        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 0.719                | 1           | MW-107B  | MW-107B_MW-107B-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 0.945                | 1           | MW-202B  | MW-202B_MW-202B-LA-22_20151008  | SAMP        | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Carbon tetrachloride_56-23-5             | 0.607                | 1           | MW-202B  | MW-202B_MW-202B-LS-21_20150408  | SAMP        | 4/8/2015    | 4/8/2015      | 8260B/5030B/5030C/50 | T      | VOC        | Carbon tetrachloride             | 56-23-5   | J         | 0.25                   |
| JUC_Chloroform_67-66-3                       | 11                   | 1           | MW-207A  | MW-207A_MW-207A-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 10.8                 | 1           | MW-207A  | MW-207A_MW-207A-LB-20_20141020  | SAMP        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 10.7                 | 1           | MW-108   | MW-108_MW-108-LB-20_20141020    | SAMP        | 10/20/2014  | 10/20/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 10.1                 | 1           | MW-108   | MW-108_MW-108-LB-16_20121021    | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 3.68                 | 1           | MW-141   | MW-141_MW-141-LS-19_20140426    | SAMP        | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 3.36                 | 1           | MW-141   | MW-141_MW-141-LA-18_20131011    | SAMP        | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 3.2                  | 1           | MW-214A  | MW-214A_MW-214A-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 3.03                 | 1           | MW-214A  | MW-214A_MW-214A-LA-22_20151008  | SAMP        | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 2.73                 | 1           | MW-214B  | MW-214B_MW-214B-LA-22_20151008  | SAMP        | 10/8/2015   | 10/8/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_Chloroform_67-66-3                       | 2.7                  | 1           | MW-214B  | MW-214B_MW-214B-LS-15_20120423  | SAMP        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Chloroform                       | 67-66-3   | J         | 0.125                  |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 27.6                 | 1           | MW-203A  | MW-203A_MW-203A-LS-25_20170419  | SAMP        | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 24.8                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-12_20130509 | SAMP        | 5/9/2013    | 5/9/2013      | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 5                      |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 21.3                 | 1           | MW-208A  | MW-208A_MW-208A-LS-15_20120423  | SAMP        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 18.2                 | 1           | MW-208A  | MW-208A_MW-208A-LB-16_20121020  | SAMP        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 19.3                 | 1           | MW-39A   | MW-39A_MW-39A-LS-15_20120423    | SAMP        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 14.5                 | 1           | MW-39A   | MW-39A_MW-39A-LS-25_20170420    | SAMP        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 9.21                 | 1           | MW-205A  | MW-205A_MW-205A-LS-15_20120423  | SAMP        | 4/23/2012   | 4/23/2012     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 8.84                 | 1           | MW-205A  | MW-205A_MW-205A-LB-16_20121020  | SAMP        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 3.14                 | 1           | MW-210A  | MW-210A_MW-210A-LS-25_20170419  | SAMP        | 4/19/2017   | 4/19/2017     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_cis-1,2-Dichloroethylene_156-59-2        | 2.25                 | 1           | MW-210A  | MW-210A_MW-210A-LS-19_20140426  | SAMP        | 4/26/2014   | 4/26/2014     | 8260B/5030B/5030C/50 | T      | VOC        | cis-1,2-Dichloroethylene         | 156-59-2  | J         | 0.25                   |
| JUC_Methyl Ethyl Ketone (2-butanone)_78-93-3 | 2910                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-15_20140210 | SAMP        | 2/10/2014   | 2/10/2014     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | J         | 75                     |
| JUC_Methyl Ethyl Ketone (2-butanone)_78-93-3 | 2690                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-11_20130208 | SAMP        | 2/8/2013    | 2/8/2013      | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | J         | 62.5                   |
| JUC_Methyl Ethyl Ketone (2-butanone)_78-93-3 | 3.52                 | 1           | MW-264   | MW-264_MW-264-LA-22_20151007    | SAMP        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | J         | 2.5                    |
| JUC_Methyl Ethyl Ketone (2-butanone)_78-93-3 | 3.33                 | 1           | MW-268   | MW-268_MW-268-LA-22_20151007    | SAMP        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl Ethyl Ketone (2-butanone) | 78-93-3   | J         | 2.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 5.05                 | 1           | MW-39A   | MW-39A_MW-39A-LS-25_20170420    | SAMP        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 4.26                 | 1           | MW-39A   | MW-39A_MW-39A-LS-23_20160422    | SAMP        | 4/22/2016   | 4/22/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 4.84                 | 1           | MW-199A  | MW-199A_MW-199A-LB-20_20141019  | SAMP        | 10/19/2014  | 10/19/2014    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 4.8                  | 1           | MW-199A  | MW-199A_MW-199A-LA-22_20151007  | SAMP        | 10/7/2015   | 10/7/2015     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 4.25                 | 1           | MW-209A  | MW-209A_MW-209A-LA-18_20131011  | SAMP        | 10/11/2013  | 10/11/2013    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 3.86                 | 1           | MW-209A  | MW-209A_MW-209A-LB-16_20121020  | SAMP        | 10/20/2012  | 10/20/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 2.96                 | 1           | MW-208A  | MW-208A_MW-208A-LS-23_20160421  | SAMP        | 4/21/2016   | 4/21/2016     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 2.94                 | 1           | MW-208A  | MW-208A_MW-208A-LS-25_20170420  | SAMP        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 2.34                 | 1           | MW-205A  | MW-205A_MW-205A-LS-25_20170420  | SAMP        | 4/20/2017   | 4/20/2017     | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methyl tert-butyl ether_1634-04-4        | 1.83                 | 1           | MW-205A  | MW-205A_MW-205A-LB-24_20161014  | SAMP        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Methyl tert-butyl ether          | 1634-04-4 | J         | 0.5                    |
| JUC_Methylene chloride_75-09-2               | 2.58                 | 1           | MW-203A  | MW-203A_MW-203A-EBT-13_20130819 | SAMP        | 8/19/2013   | 8/19/2013     | 8260B/5030B/5030C/50 | T      | VOC        | Methylene chloride               | 75-09-2   | J         | 1.25                   |
| JUC_Tetrachloroethylene_127-18-4             | 127                  | 1           | MW-203A  | MW-203A_MW-203A-LS-15_20120420  | SAMP        | 4/20/2012   | 4/20/2012     | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethylene              | 127-18-4  | J         | 0.25                   |
| JUC_Tetrachloroethylene_127-18-4             | 118                  | 1           | MW-203A  | MW-203A_MW-203A-LB-16_20121021  | SAMP        | 10/21/2012  | 10/21/2012    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethylene              | 127-18-4  | J         | 0.25                   |
| JUC_Tetrachloroethylene_127-18-4             | 82.3                 | 1           | MW-107T  | MW-107T_MW-107T-LB-24_20161014  | SAMP        | 10/14/2016  | 10/14/2016    | 8260B/5030B/5030C/50 | T      | VOC        | Tetrachloroethylene              | 127-18-4  | J         | 0.                     |

A decorative graphic on the left side of the page consists of several overlapping rectangles. A large red rectangle is positioned in the middle-left. Above it, a dark gray rectangle extends from the top edge. Below the red rectangle, a light gray rectangle extends from the bottom edge. To the right of the red rectangle, a black rectangle is positioned at the bottom. The overall layout is minimalist and modern.

# E

Attachment E

2000 Groundwater Risk  
Assessment Excerpt

**ATTACHMENT E TABLE OF CONTENTS:**

**Chapter 34 Text – Baseline Risk Assessment for FU7**

**Chapter 34 Tables – Baseline Risk Assessment for FU7**

**Chapter 7 Table 7-4c – Exposure Factors for Groundwater**

## 34.0 Baseline Risk Assessment for FU7

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### 34.1 Human Health Evaluation

This RA was conducted in accordance with the RA approach presented in Section 7.0 and the agreements reached during meetings with the agencies, which are presented in Appendix A. This section describes each of the four steps of the RA applied to groundwater at the Main Installation, addressed as FU7. Figure 32-1 shows the locations of the groundwater monitoring wells across the Main Installation and immediately off-site of the Depot. The Allen Well Field location and the potentiometric surface map are shown on Figures 2-14 and 2-12, respectively. Monitoring well data collected between 1996 and 1998 were used for this RI/RA. Figures 32-2 to 32-7 present the distribution of CVOCs in the monitoring wells in the Main Installation.

A network of monitoring wells and pizometers was used to evaluate the nature and extent of groundwater contamination at the Main Installation. Low levels of chlorinated organic VOCs were detected in the southeastern, southwestern, and central portions of the Main Installation. No correlation between subsurface soil and groundwater contamination was found. The organic chemicals detected in the southeastern portion of the Main Installation were found to include chlorinated solvents at higher concentrations near the property boundary in the off-site and upgradient location (groundwater flows to the northwest toward the center of Main Installation), indicating a possible off-site source. Similarly, groundwater in the southwestern portion has the chlorinated solvents TCE and PCE, with the highest concentrations in the off-site upgradient location (PZ04). Groundwater from this area also flows to the center in the northeastern portion of the Main Installation. Dry cleaning facilities, which have since been removed, may have been the sources of the PCE and its degradation products.

Potential risks from groundwater use within the Main Installation are estimated for three separate areas represented by a plume in the southwestern area (Plume A), a plume in the southeastern area (Plume B), and a separate more diffuse area (Plume C) in the center of the Main Installation. Each of these plumes for this RA are defined by the monitoring results from the following wells:

- Plume A is represented by temporary and permanent wells HY02, MW-21, MW-22, MW-23, MW-47, and PZ04;
- Plume B is represented by temporary and permanent wells HY03, HY04, MW-25, MW-26, MW-64, and PZ05; and
- Plume C is represented by temporary and permanent wells MW-34, MW-43, MW-38, MW-39, MW-62, MW-63, and PZ03.

As discussed in Section 32.0, inorganic chemicals tend to be commonly and sporadically distributed throughout the Main Installation groundwater (see Table 32-3). Their occurrence also was sporadic during various monitoring periods. For example, arsenic was detected in only one well in the fourth quarter 1998 monitoring (see Figure 32-17). Metals concentrations appear to be slightly elevated in the southwestern corner (two wells, MW-21 and MW-22) near the plating shop. Concentrations were significantly lower during the fourth quarter 1998 monitoring. Groundwater from this area (southwest) moves to the center of the site toward two troughs, one located in the south-central portion of the Main Installation and a second located in the northwestern portion (see Figure 2-12). All of the data from 1996 to 1998 were included in this COPCs selection and the risk estimations.

There currently is no groundwater use within or surrounding the Depot. In the interest of conservatism, a future exposure scenario was assumed whereby industrial and residential receptors are exposed to groundwater via potable use. This section therefore focuses on risk estimations for a hypothetical future groundwater use.

### **34.1.1 COPC Selection**

Chemicals detected in the monitoring wells above background levels and groundwater screening levels were selected as COPCs, as discussed in Section 7.0. Groundwater screening levels are determined by the most conservative of three values: MCLs, MCLGs, and EPA Region III Tap Water RBC values (see Appendix D). To maintain conservatism in this risk analysis, target analytes are sometimes retained as COPCs even though they may be detected below MCLs. Detected compounds analyzed to characterize general aquifer water quality (sodium, chloride, total dissolved solids [TDS], and nitrate/nitrite) or essential nutrients are not important for human health protection and often do not have a toxicity value. Therefore, these general chemistry parameters were not included as COPCs. The COPCs used for the RA for FU7 are shown in Table 34-1.

### **34.1.2 Exposure Assessment**

A CSM for groundwater was discussed briefly in Section 33.2. The primary sources of COPCs in the environmental media within the Main Installation are historical spills and leaks from the storage of chemicals and the surface application of pesticides, herbicides, and waste oil, as well as any unknown buried wastes disposed during Depot operations. Contaminants could be transported through infiltration and leaching to shallow groundwater and subsequently could migrate to downgradient areas.

Section 33.0 presents a fate and transport discussion for the groundwater flow direction, velocity, and contaminant migration pathways. The site groundwater fate and transport can be summarized as follows. Groundwater in the uppermost water-bearing unit, the fluvial aquifer, flows from south, east, and west to lows in the potentiometric surface toward the center of the Main Installation. One low is toward the northwestern portion of the Main Installation and a second is present in the south-central portion. On the basis of

the available data, site groundwater is moving at a rate of approximately 149 ft/yr toward the center of the site. Plumes A and B probably are moving to the center of the site toward the two troughs and are potentially co-mingling in the Plume C area. The downgradient-most well in the trough to the northwest of the installation (MW-43, located off the Depot boundary in the downgradient location) has only trace levels of chloroform at 2 µg/L. Contamination is not found to move toward the southern trough in measurable concentrations. No other VOCs, except carbon disulfide at a trace level of 1 µg/L, have been detected in MW-24, which is the downgradient well in the trough in the south-central section of the Main Installation. Thus, with regard to off-site locations to the south, little or no migration of groundwater contaminants through the trough would occur.

The wells MW-43, MW-34, and MW-38 are in an area of potential vertical migration to the underlying confined sand (possibly the Memphis) aquifer; however additional characterization is being performed at Dunn Field to evaluate whether downward migration is occurring here. Off-site migration is occurring through the depressed clay surface aligned with wells MW-43, MW-34, and MW-38. Small amounts of degradation products were detected in the site groundwater. Some of the more toxic degradation products (such as vinyl chloride), however, were not detected in the site groundwater. The potential for volatilization exposures through the ground surface for the CVOCs in groundwater is negligible, because of the impervious nature of surface soils in the area, the depth to groundwater (greater than 50-ft depths), and the low levels of the COPCs detected. Considering the historical nature of VOC releases at the site (55 years), potential migration to off-site areas would have occurred by now. However, estimated chemical-specific migration rates (Table 33-1) indicate the maximum likely distances the CVOCs could reach. The monitoring data for the off-site areas show that the site constituents are not reaching off-site areas in measurable levels.

There is no residential groundwater use on the Depot or in the surrounding community under current or foreseeable future land use conditions. Drinking water is supplied by MLGW pumping wells in the Memphis aquifer. Currently, site groundwater is not being used for industrial use at the Depot. Because of the availability of municipal water supplies, the groundwater is not likely to be used for drinking in the foreseeable future, even if site operations were to be altered to a different industrial use; i.e., redevelopment of the Depot.

Table 34-2 summarizes hypothetical future exposure pathways for FU7 and identifies the pathways that will be evaluated quantitatively in this RA. The potential receptors evaluated for potable water use are:

- Hypothetical future industrial worker; and
- Hypothetical future on-site resident-adult and child (for comparison purposes only).

Maximum and average concentrations were estimated for groundwater from each plume for chemicals that exhibit plume behavior (i.e., CVOCs). For chemicals that do not occur

as plumes (i.e., inorganic chemicals), the upperbound exposure concentration was estimated using the UCL 95% concentrations on the mean for all wells associated with the Main Installation. The estimated concentrations, referred to as EPCs, are listed in Tables 34-3 and 34-4. The dose (intake) was estimated for each of the complete exposure pathways and included in Appendix I. The exposure assumptions are standard default factors. For example, ingestion rates of 2 L/day for an adult and 1 L/day for a child and industrial worker were used. Exposure frequency is assumed to be 350 days per year for residential receptors and 250 days per year for industrial receptors. All assumptions are presented in Appendix G.

An oral exposure dose was estimated for organic and inorganic COPCs. The dose estimates are used for comparison with the CSFs and the RfDs to estimate risks and hazards. Inhalation exposure to the CVOCs was assumed equal to the oral dose to estimate intake. Inorganic COPCs were evaluated for oral and dermal doses.

### **34.1.3 Toxicity Assessment**

Table 34-5 presents toxicity values from EPA toxicity factor sources for all of the COPCs at FU7.

Oral CSFs are available for 1,1,2,2-Tetrachloroethane, arsenic, chloroethane, chloromethane, dibromochloromethane, PCE, and TCE. Inhalation CSFs are available for 1,1,2,2-Tetrachloroethane, arsenic, beryllium, cadmium, chloromethane, chromium (total), PCE, and TCE. Chronic oral RfDs are available for aluminum, arsenic, beryllium, cadmium, chlorobenzene, chloroethane, chromium (total), dibromochloromethane, manganese, nickel, PCE, TCE, and vanadium. Inhalation RfDs are available for chlorobenzene, chloroethane, and PCE. Oral toxicity factors were reduced by the gastrointestinal dermal absorption ( $ABS_{GI}$ ) factors for comparisons with dermal intake estimates. These values can be found in Table 7-10. Ten carcinogenic and five noncarcinogenic inorganic and organic chemicals were identified as COPCs at FU7. All of the chemicals were analyzed for their potential toxicity contribution to represent the combined effect of all site-related chemicals.

### **34.1.4 Risk Characterization**

Estimates of ELCR and noncarcinogenic health hazards are summarized for all of the COPCs on a route- and receptor-specific basis for FU7 in Tables 34-6 (average VOC plume concentrations) and 34-7 (maximum VOC plume concentrations). Appendix I provides detailed risk calculations, along with histograms of the risks and the HIs per receptor group. For the chemicals that do not occur as plumes (e.g., inorganic COPCs), the EPC was estimated as the UCL 95% concentration across the Main Installation, and one set of risk and HI values was estimated for the entire Main Installation area. Three sets of risk and HI calculations were performed for organic COPCs for Plumes A, B, and C. The average concentrations within each of the three organic plumes combined with inorganic risks and HIs across the Depot are included in Table 34-6. The maximum



concentration within each of the three plumes, combined with inorganic risks and HIs across the Depot, are included in Table 34-7. The ELCR estimates for a future industrial worker exposure to Plumes A, B, or C are  $2 \times 10^{-5}$  each, and the HI is below 1.0. The risk driver within the site-wide inorganics is arsenic. The risk drivers for all organic plumes are PCE and 1,1,2,2-Tetrachloroethane (with the exception of Plume A, which is PCE only). The risks from maximum organic COPC concentrations within Plumes A, B, and C are  $4 \times 10^{-5}$ ,  $2 \times 10^{-5}$ , and  $2 \times 10^{-5}$ , respectively. The carcinogenic risks are within the acceptable risk limit range; noncarcinogenic HIs for Plumes A, B, and C, respectively, are 0.6, 0.6, and 0.5, all of which are below 1.0. Figures 34-1 and 34-2 present the risks and HIs for an industrial worker from groundwater use at the Main Installation.

For exposure to site-wide inorganics and organics at average concentrations from either Plume A or B, the ELCR to a future hypothetical residential adult is  $9 \times 10^{-5}$  and the HI is 1.0. Plume C resulted in an ELCR of  $7 \times 10^{-5}$  and an HI of 1.0. The risk driver within the site-wide inorganics is arsenic. The risk drivers for all organic plumes are PCE and TCE, including 1,1,2,2-Tetrachloroethane, for Plumes B and C, and dibromochloromethane for Plume C. The risks to a hypothetical residential adult from exposures to the maximum concentrations estimated from Plumes A, B, and C are  $2 \times 10^{-4}$ ,  $1 \times 10^{-5}$ , and  $8 \times 10^{-5}$ , respectively. The risks are either above or near the upper limit of the acceptable risk range, indicating that groundwater within the plume area is unfit for drinking.

For exposure to site-wide inorganics and average concentrations of organics from Plumes A, B, or C, the ELCR to a future hypothetical residential child is  $3 \times 10^{-5}$  and the HI is 3.0. The risk driver within the site-wide inorganics is arsenic. The risk drivers for all organic plumes are PCE, TCE, and 1,1,2,2-Tetrachloroethane (with the exception of Plume A, which is PCE only). For exposure to site-wide inorganics and organics at maximum concentrations from Plume A, B, or C, the ELCRs for a future hypothetical residential child are  $6 \times 10^{-5}$ ,  $4 \times 10^{-5}$ , and  $3 \times 10^{-5}$ , respectively. The HIs are 4.0 for Plumes A and B and 3.0 for Plume C. The risk driver within the site-wide inorganics is arsenic.

Groundwater is not currently used for potable purposes at the site. Overall, risks to a future industrial worker or hypothetical resident from exposure to average concentrations present risks that are within the 1 to 100 in a million risk range ( $10^{-6}$  to  $10^{-4}$ ). Risks from maximum concentrations, on the other hand, are slightly above the upper limit of the acceptable risk levels, while the HI is at or below 1.0. Although there is no intent to use groundwater as potable water in the future, any plans for future use would have to be carefully evaluated.

In addition to baseline RA results, the following factors also must be considered for future site management decisions:

- Distance to the potential exposure point for the observed plume(s); and
- Time required for the plume(s) to attenuate below MCLs at the identified point of exposure.

There are no residential or industrial groundwater users within the site. The downgradient location of the nearest potential receptor is not clearly known, but in a well survey none were identified between the Depot and the Allen Well Field (see Figure 2-14). A conservative assumption regarding exposure is that fluvial groundwater enters the Memphis aquifer in the northwestern portion of the Depot, where it is eventually pumped and potentially enters the City of Memphis drinking water supply. It should be stressed that this assumption has not been verified in evaluating groundwater at the Depot or in monitoring wells at the Allen Well Field.

As discussed in Section 33.5.1, transport calculations indicate that CVOCs from the southwestern and southeastern portions of the Main Installation are not reaching (in measurable quantities) the low in the potentiometric surface in the vicinity of MW-34. Evaluation of the plume configuration, based on monitoring data, confirms this calculated result. Concentrations of PCE from the southwestern portion of the Main Installation (MW-21) have decreased by about a factor of 50 at the most downgradient well where PCE was detected (MW-39)—a distance of about 2,200 ft (see Figure 32-2). Similar reductions in concentrations would be expected along the 2,000-ft distance from MW-39 to the potentiometric low at MW-34. Additional order-of-magnitude concentration reductions are expected over the approximately 1.5-mile distance from the Depot to the Allen Well Field. Because no TCE or PCE, or their degradation products, were detected in these downgradient wells, future migration in detectable levels is highly unlikely.

The groundwater within areas of organic contamination is not usable for potable purposes because of the presence of CVOCs. Although site groundwater has low-level CVOc contamination, the shallow aquifer is not used for residential or industrial potable use at the Depot or within the surrounding community. Because of this lack of exposure, risks are not considered significant.

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TABLE 34-1

Constituents of Potential Concern in FU7 - Groundwater  
 Memphis Depot Main Installation RI

| Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Matrix | Units | Parameter Name            | Number Analyzed | Number Detected | Minimum Detection Limit | Maximum Detection Limit | Minimum Detected Concentration | Maximum Detected Concentration | Arithmetic Mean Detected Concentration | Background Concentration | Regulatory Criteria for Groundwater | COPC/BASIS |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|---------------------------|-----------------|-----------------|-------------------------|-------------------------|--------------------------------|--------------------------------|----------------------------------------|--------------------------|-------------------------------------|------------|---|
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | 1,1,2,2-TETRACHLOROETHANE | 83              | 2               | 0.005                   | 0.01                    | 0.002                          | 0.004                          | 0.003                                  |                          | 0.000053                            | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | ARSENIC                   | 76              | 13              | 0.00068                 | 0.0024                  | 0.0016                         | 0.091                          | 0.013                                  |                          | 0.05                                | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | BERYLLIUM                 | 76              | 10              | 0.00002                 | 0.00015                 | 0.00018                        | 0.0059                         | 0.0014                                 | 0.0006                   | 0.004                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | CADMIUM                   | 76              | 37              | 0.000085                | 0.0018                  | 0.0003                         | 0.085                          | 0.009                                  |                          | 0.005                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | CHLOROBENZENE             | 83              | 2               | 0.005                   | 0.01                    | 0.001                          | 0.004                          | 0.0025                                 |                          | 0.0035                              | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | CHLOROMETHANE             | 83              | 2               | 0.01                    | 0.01                    | 0.001                          | 0.002                          | 0.0015                                 |                          | 0.0015                              | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | CHROMIUM, TOTAL           | 76              | 49              | 0.00039                 | 0.0022                  | 0.0012                         | 0.28                           | 0.028                                  | 0.054                    | 0.11                                | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | DIBROMOCHLOROMETHANE      | 83              | 2               | 0.005                   | 0.01                    | 0.001                          | 0.002                          | 0.0015                                 |                          | 0.00013                             | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | LEAD                      | 76              | 41              | 0.00099                 | 0.0093                  | 0.0011                         | 0.11                           | 0.014                                  | 0.0094                   | 0.015                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | MANGANESE                 | 69              | 61              | 0.000063                | 0.00053                 | 0.00092                        | 2.7                            | 0.23                                   | 0.56                     | 0.073                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | NICKEL                    | 76              | 40              | 0.00027                 | 0.0077                  | 0.00085                        | 0.21                           | 0.021                                  | 0.031                    | 0.1                                 | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | TETRACHLOROETHYLENE(PCE)  | 83              | 33              | 0.005                   | 0.01                    | 0.001                          | 0.12                           | 0.021                                  | 0.001                    | 0.005                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | TRICHLOROETHYLENE (TCE)   | 83              | 31              | 0.005                   | 0.01                    | 0.001                          | 0.058                          | 0.009                                  |                          | 0.005                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | VANADIUM                  | 69              | 48              | 0.0003                  | 0.0016                  | 0.00031                        | 0.26                           | 0.014                                  | 0.006                    | 0.026                               | Yes        | A |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | ALUMINUM                  | 69              | 55              | 0.0061                  | 0.023                   | 0.011                          | 126                            | 4.3                                    | 1.8                      |                                     | Yes        | D |
| 7 WG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MG/L   |       | CHLOROETHANE              | 83              | 1               | 0.01                    | 0.01                    | 0.001                          | 0.001                          | 0.001                                  |                          |                                     | Yes        | D |
| Notes: Data evaluated include field duplicates and normal samples.<br>A full list of all chemicals and their COPC status can be found in Appendix I.<br>A Exceeds Criteria<br>B Does not exceed Criteria<br>C Does not exceed Background<br>D No Criteria available & exceeds Background; or no Criteria or Background available<br>E Chemical is an essential nutrient and professional judgment was used in eliminating it as a COPC.<br>F Chemical is a common lab contaminant and professional judgment was used in eliminating it as a COPC.<br>G Chemical is a member of a chemical class that contains other COPCs. |        |       |                           |                 |                 |                         |                         |                                |                                |                                        |                          |                                     |            |   |

**TABLE 34-2**

Summary of Exposure Pathways to be Quantified at FU7  
*Memphis Depot Main Installation RI*

| Potentially Exposed Population   | Exposure Route, Medium, and Exposure Point                             | Pathway Selected for Evaluation? | Reason for Selection or Exclusion                                            |
|----------------------------------|------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------|
| <b>Future Land Use</b>           |                                                                        |                                  |                                                                              |
| On-site Industrial Worker        | Incidental ingestion, dermal contact, and inhalation from groundwater. | Yes                              | Hypothetical future reasonable maximum exposure scenario for future workers. |
| Hypothetical On-site Residential | Incidental ingestion, dermal contact, and inhalation from groundwater  | Yes                              | Worst-case scenario evaluated for comparison purposes only.                  |

**TABLE 34-3**

Exposure Point Concentrations for Inorganic Compounds in FU7 - Groundwater

*Memphis Depot Main Installation RI*

| Units | Parameter       | Number of<br>Analyses | Number of<br>Detects | Arithmetic Mean<br>Concentration | Maximum<br>Detected<br>Concentration | UCL95<br>Normal | UCL95<br>Lognormal | EPC    |
|-------|-----------------|-----------------------|----------------------|----------------------------------|--------------------------------------|-----------------|--------------------|--------|
| MG/L  | ALUMINUM        | 60                    | 48                   | 4.7                              | 126                                  | 7.3             | 9.5                | 9.5    |
| MG/L  | ARSENIC         | 66                    | 10                   | 0.015                            | 0.091                                | 0.0054          | 0.0023             | 0.0023 |
| MG/L  | BERYLLIUM       | 66                    | 10                   | 0.0014                           | 0.0059                               | 0.000415        | 0.0003             | 0.0003 |
| MG/L  | CADMIUM         | 66                    | 29                   | 0.0082                           | 0.085                                | 0.0064          | 0.0081             | 0.0081 |
| MG/L  | CHROMIUM, TOTAL | 66                    | 41                   | 0.031                            | 0.28                                 | 0.03            | 0.029              | 0.029  |
| MG/L  | MANGANESE       | 60                    | 53                   | 0.24                             | 2.7                                  | 0.32            | 1                  | 1      |
| MG/L  | NICKEL          | 66                    | 33                   | 0.022                            | 0.21                                 | 0.019           | 0.022              | 0.022  |
| MG/L  | VANADIUM        | 60                    | 42                   | 0.016                            | 0.26                                 | 0.019           | 0.019              | 0.019  |

Note: Inorganic constituents have been evaluated from site-wide data, and UCL 95% calculations have been used for EPC values.

**TABLE 34-4**

Exposure Point Concentrations for Organic Compounds in FU7 - Groundwater

*Memphis Depot Main Installation RI*

| PlumeID | Parameter                         | Arithmetic Mean<br>Concentration | Maximum<br>Detected<br>Concentration | Maximum<br>Concentration's<br>Qualifier | Station ID | EPC    |
|---------|-----------------------------------|----------------------------------|--------------------------------------|-----------------------------------------|------------|--------|
| A       | CHLOROBENZENE Average             | 0.004                            | 0.004                                | J                                       | HY02       | 0.004  |
| A       | TETRACHLOROETHYLENE(PCE) Average  | 0.039                            | 0.12                                 | =                                       | MW21       | 0.039  |
| A       | TRICHLOROETHYLENE (TCE) Average   | 0.0079                           | 0.031                                | =                                       | MW21       | 0.0079 |
| B       | 1,1,2,2-TETRACHLOROETHANE Average | 0.004                            | 0.004                                | J                                       | MW64       | 0.004  |
| B       | CHLOROBENZENE Average             | 0.001                            | 0.001                                | J                                       | PZ05       | 0.001  |
| B       | CHLOROMETHANE Average             | 0.001                            | 0.001                                | J                                       | MW26       | 0.001  |
| B       | TETRACHLOROETHYLENE(PCE) Average  | 0.0094                           | 0.016                                | =                                       | MW26       | 0.0094 |
| B       | TRICHLOROETHYLENE (TCE) Average   | 0.0093                           | 0.058                                | =                                       | PZ05       | 0.0093 |
| C       | 1,1,2,2-TETRACHLOROETHANE Average | 0.002                            | 0.002                                | J                                       | MW34       | 0.002  |
| C       | CHLOROETHANE Average              | 0.001                            | 0.001                                | J                                       | MW43       | 0.001  |
| C       | CHLOROMETHANE Average             | 0.002                            | 0.002                                | J                                       | MW34       | 0.002  |
| C       | DIBROMOCHLOROMETHANE Average      | 0.0015                           | 0.002                                | J                                       | MW63       | 0.0015 |
| C       | TETRACHLOROETHYLENE(PCE) Average  | 0.0055                           | 0.009                                | J                                       | MW39       | 0.0055 |
| C       | TRICHLOROETHYLENE (TCE) Average   | 0.0068                           | 0.037                                | =                                       | MW62       | 0.0068 |

Note: Organic constituents have been evaluated from plume-specific data, and arithmetic means have been used for EPC values.

All units are mg/L.

Plume A consists of the following wells: HY02, MW21, MW22, MW23, MW47 &amp; PZ04

Plume B consists of the following wells: HY03, HY04, MW25, MW26, MW64 &amp; PZ05

Plume C consists of the following wells: MW34, MW43, MW38, MW39, MW62, MW63 &amp; PZ03

**TABLE 34-5**

Toxicity Factors for FU7

*Memphis Depot Main Installation RI*

| Name                      | Weight-of-Evidence Class | ABS <sub>GI</sub> | Oral SF kg-day/mg | Dermal SF kg-day/mg | Inhal SF kg-day/mg | C Oral RfD mg/kg-day | Dermal RfD mg/kg-day | C Inhal RfD mg/kg-day |
|---------------------------|--------------------------|-------------------|-------------------|---------------------|--------------------|----------------------|----------------------|-----------------------|
| 1,1,2,2-Tetrachloroethane | C                        | 70%               | 2.00E-01          | 2.86E-01            | 2.03E-01           |                      |                      |                       |
| Aluminum                  |                          | 10%               |                   |                     |                    | 1.00E+00             | 1.00E-01             | 1.00E+00              |
| Arsenic                   | A                        | 41%               | 1.50E+00          | 3.66E+00            | 1.51E+01           | 3.00E-04             | 1.23E-04             |                       |
| Beryllium                 | B1                       | 1%                |                   |                     | 8.40E+00           | 2.00E-03             | 2.00E-05             | 5.70E-06              |
| Cadmium                   | B1                       | 1%                |                   |                     | 6.30E+00           | 1.00E-03             | 1.00E-05             |                       |
| Chlorobenzene             | D                        | 31%               |                   |                     |                    | 2.00E-02             | 6.20E-03             | 5.70E-03              |
| Chloroethane              |                          | 80%               | 2.90E-03          | 3.63E-03            |                    | 4.00E-01             | 3.20E-01             | 2.90E+00              |
| Chloromethane             | C                        | 80%               | 1.30E-02          | 1.63E-02            | 6.00E-03           |                      |                      |                       |
| Chromium (total)          | A                        | 2%                |                   |                     | 4.20E+01           | 3.00E-03             | 6.00E-05             | 2.86E-05              |
| Dibromochloromethane      | C                        | 60%               | 8.40E-02          | 1.40E-01            |                    | 2.00E-02             | 1.20E-02             |                       |
| Manganese                 | D                        | 4%                |                   |                     |                    | 1.40E-01             | 5.60E-03             | 1.43E-05              |
| Nickel                    | D                        | 27%               |                   |                     |                    | 2.00E-02             | 5.40E-03             |                       |
| Tetrachloroethene         | C-B2                     | 100%              | 5.20E-02          | 5.20E-02            | 2.00E-03           | 1.00E-02             | 1.00E-02             | 1.71E-01              |
| Trichloroethene           | B2                       | 15%               | 1.10E-02          | 7.33E-02            | 6.00E-03           | 6.00E-03             | 9.00E-04             |                       |
| Vanadium                  |                          | 1%                |                   |                     |                    | 7.00E-03             | 7.00E-05             |                       |

Note: Master list of toxicity factors, with sources and basis, is provided in Section 7.0.



**TABLE 34-6**

Main Installation Groundwater Risks and Noncarcinogenic Hazards Based on Average Concentrations  
 Memphis Depot Main Installation RI

| Exposure Scenarios                      | Exposure Pathways                         | Total ELCR   | Total HI   | Chemicals of Concern                                      |
|-----------------------------------------|-------------------------------------------|--------------|------------|-----------------------------------------------------------|
| <b>Industrial Worker</b>                |                                           |              |            |                                                           |
|                                         | Groundwater - Site-wide Inorganics        | 1E-05        | 0.5        | Arsenic                                                   |
|                                         | Groundwater - Plume A Organics (Averages) | 8E-06        | 0.06       | PCE                                                       |
|                                         | <b>Total</b>                              | <b>2E-05</b> | <b>0.5</b> | <b>Arsenic, PCE</b>                                       |
|                                         | Groundwater - Site-wide Inorganics        | 1E-05        | 0.5        | Arsenic                                                   |
|                                         | Groundwater - Plume B Organics (Averages) | 8E-06        | 0.03       | 1,1,2,2-Tetrachloroethane, PCE                            |
|                                         | <b>Total</b>                              | <b>2E-05</b> | <b>0.5</b> | <b>Arsenic, PCE, 1,1,2,2-Tetrachloroethane</b>            |
|                                         | Groundwater - Site-wide Inorganics        | 1E-05        | 0.5        | Arsenic                                                   |
|                                         | Groundwater - Plume C Organics (Averages) | 5E-06        | 0.02       | 1,1,2,2-Tetrachloroethane, PCE                            |
|                                         | <b>Total</b>                              | <b>2E-05</b> | <b>0.5</b> | <b>Arsenic, PCE, 1,1,2,2-Tetrachloroethane</b>            |
| <b>Residential Adult (age-adjusted)</b> |                                           |              |            |                                                           |
|                                         | Groundwater - Site-wide Inorganics        | 5E-05        | 1          | Arsenic                                                   |
|                                         | Groundwater - Plume A Organics (Averages) | 3E-05        | 0.2        | PCE, TCE                                                  |
|                                         | <b>Total</b>                              | <b>9E-05</b> | <b>1</b>   | <b>Arsenic, PCE, TCE</b>                                  |
|                                         | Groundwater - Site-wide Inorganics        | 5E-05        | 1          | Arsenic                                                   |
|                                         | Groundwater - Plume B Organics (Averages) | 3E-05        | 0.08       | 1,1,2,2-Tetrachloroethane, PCE, TCE                       |
|                                         | <b>Total</b>                              | <b>9E-05</b> | <b>1</b>   | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane</b>       |
|                                         | Groundwater - Site-wide Inorganics        | 5E-05        | 1          | Arsenic                                                   |
|                                         | Groundwater - Plume C Organics (Averages) | 2E-05        | 0.05       | 1,1,2,2-Tetrachloroethane, PCE, TCE, DBCM                 |
|                                         | <b>Total</b>                              | <b>7E-05</b> | <b>1</b>   | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane, DBCM</b> |
| <b>Residential Child<sup>1</sup></b>    |                                           |              |            |                                                           |
|                                         | Groundwater - Site-wide Inorganics        | 2E-05        | 3          | Arsenic                                                   |
|                                         | Groundwater - Plume A Organics (Averages) | 1E-05        | 0.4        | PCE                                                       |
|                                         | <b>Total</b>                              | <b>3E-05</b> | <b>3</b>   | <b>Arsenic, PCE</b>                                       |
|                                         | Groundwater - Site-wide Inorganics        | 2E-05        | 3          | Arsenic                                                   |
|                                         | Groundwater - Plume B Organics (Averages) | 1E-05        | 0.2        | 1,1,2,2-Tetrachloroethane, PCE                            |
|                                         | <b>Total</b>                              | <b>3E-05</b> | <b>3</b>   | <b>Arsenic, PCE, 1,1,2,2-Tetrachloroethane</b>            |
|                                         | Groundwater - Site-wide Inorganics        | 2E-05        | 3          | Arsenic                                                   |
|                                         | Groundwater - Plume C Organics (Averages) | 8E-06        | 0.1        | 1,1,2,2-Tetrachloroethane, PCE                            |
|                                         | <b>Total</b>                              | <b>3E-05</b> | <b>3</b>   | <b>Arsenic, PCE, 1,1,2,2-Tetrachloroethane</b>            |

Notes:

<sup>1</sup>Carcinogenic risks for child scenario are optional evaluations & may not have been evaluated for all media.

DBCM = Dibromochloromethane

PCE = Tetrachloroethane

TCE = Trichloroethene

TABLE 34-7

Main Installation Groundwater Risks and Noncarcinogenic Hazards Based on Maximum Concentrations  
 Memphis Depot Main Installation RI

| Exposure Scenarios                      | Exposure Pathways                    | Total ELCR   | Total HI   | Chemicals of Concern                                      |
|-----------------------------------------|--------------------------------------|--------------|------------|-----------------------------------------------------------|
| <b>Industrial Worker</b>                |                                      |              |            |                                                           |
|                                         | Groundwater - Site-wide Inorganics   | 1E-05        | 0.5        | Arsenic                                                   |
|                                         | Groundwater - Plume A Organics (Max) | 2E-05        | 0.2        | PCE, TCE                                                  |
|                                         | <b>Total</b>                         | <b>4E-05</b> | <b>0.6</b> | <b>Arsenic, PCE, TCE</b>                                  |
|                                         | Groundwater - Site-wide Inorganics   | 1E-05        | 0.5        | Arsenic                                                   |
|                                         | Groundwater - Plume B Organics Max   | 1E-05        | 0.11       | 1,1,2,2-Tetrachloroethane, PCE, TCE                       |
|                                         | <b>Total</b>                         | <b>2E-05</b> | <b>0.6</b> | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane</b>       |
|                                         | Groundwater - Site-wide Inorganics   | 1E-05        | 0.5        | Arsenic                                                   |
|                                         | Groundwater - Plume C Organics Max   | 7E-06        | 0.07       | 1,1,2,2-Tetrachloroethane, PCE, TCE                       |
|                                         | <b>Total</b>                         | <b>2E-05</b> | <b>0.5</b> | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane</b>       |
| <b>Residential Adult (age-adjusted)</b> |                                      |              |            |                                                           |
|                                         | Groundwater - Site-wide Inorganics   | 5E-05        | 1          | Arsenic                                                   |
|                                         | Groundwater - Plume A Organics Max   | 1E-04        | 0.5        | PCE, TCE                                                  |
|                                         | <b>Total</b>                         | <b>2E-04</b> | <b>2</b>   | <b>Arsenic, PCE, TCE</b>                                  |
|                                         | Groundwater - Site-wide Inorganics   | 5E-05        | 1          | Arsenic                                                   |
|                                         | Groundwater - Plume B Organics Max   | 5E-05        | 0.3        | 1,1,2,2-Tetrachloroethane, PCE, TCE                       |
|                                         | <b>Total</b>                         | <b>1E-04</b> | <b>2</b>   | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane</b>       |
|                                         | Groundwater - Site-wide Inorganics   | 5E-05        | 1          | Arsenic                                                   |
|                                         | Groundwater - Plume C Organics Max   | 3E-05        | 0.2        | 1,1,2,2-Tetrachloroethane, PCE, TCE, DBCM                 |
|                                         | <b>Total</b>                         | <b>8E-05</b> | <b>1</b>   | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane, DBCM</b> |
| <b>Residential Child<sup>1</sup></b>    |                                      |              |            |                                                           |
|                                         | Groundwater - Site-wide Inorganics   | 2E-05        | 3          | Arsenic                                                   |
|                                         | Groundwater - Plume A Organics Max   | 4E-05        | 1          | PCE, TCE                                                  |
|                                         | <b>Total</b>                         | <b>6E-05</b> | <b>4</b>   | <b>Arsenic, PCE, TCE</b>                                  |
|                                         | Groundwater - Site-wide Inorganics   | 2E-05        | 3          | Arsenic                                                   |
|                                         | Groundwater - Plume B Organics Max   | 2E-05        | 0.7        | 1,1,2,2-Tetrachloroethane, PCE, TCE                       |
|                                         | <b>Total</b>                         | <b>4E-05</b> | <b>4</b>   | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane</b>       |
|                                         | Groundwater - Site-wide Inorganics   | 2E-05        | 3          | Arsenic                                                   |
|                                         | Groundwater - Plume C Organics Max   | 1E-05        | 0.5        | 1,1,2,2-Tetrachloroethane, PCE, TCE                       |
|                                         | <b>Total</b>                         | <b>3E-05</b> | <b>3</b>   | <b>Arsenic, PCE, TCE, 1,1,2,2-Tetrachloroethane</b>       |

Notes:

<sup>1</sup>Carcinogenic risks for child scenario are optional evaluations & may not have been evaluated for all media.

DBCM = Dibromochloromethane

PCE = Tetrachloroethane

TCE = Trichloroethene

TABLE 7-4c

Exposure Factors for Groundwater

Memphis Depot Main Installation RI

| Symbols                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Parameter                                         | Future            |   |                         |     |                         |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------|---|-------------------------|-----|-------------------------|---|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                   | Industrial Worker |   | Onsite Resident (Adult) |     | Onsite Resident (Child) |   |
| BW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Body Weight (kg)                                  | 70                | a | 70                      | a   | 15                      | a |
| IR_Inh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Inhalation Rate (m <sup>3</sup> /day)             | *                 |   | *                       |     | *                       |   |
| AT_C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Averaging Time - Carcinogenic                     | 70x365            | a | 70x365                  | a   | N/A                     |   |
| AT_NC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Averaging Time - Noncarcinogenic                  | 25x365            | a | 30x365                  | a   | 6x365                   | a |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                   |                   |   |                         |     |                         |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Groundwater</b>                                |                   |   |                         |     |                         |   |
| IR_Ing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ingestion Rate of Water (L/day)                   | 1                 | a | 2                       | a   | 1                       | a |
| IR_adj_Ing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Age-adjusted Incidental Ingestion Rate (L/day)    | N/A               |   | 1.1                     | a,f | N/A                     |   |
| SA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Skin Surface Area (cm <sup>2</sup> )              | 2679              | b | 20,000                  | c   | 6,557                   | d |
| SA_adj                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Age-adjusted Skin Surface Area (cm <sup>2</sup> ) | N/A               |   | 9480                    | c,g | N/A                     |   |
| ET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Exposure Time (hours/day)                         | 0.007             | e | 0.007                   | e   | 0.007                   | e |
| EF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Exposure Frequency (days/year)                    | 250               | a | 350                     | a   | 350                     | a |
| ED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Exposure Duration (years)                         | 25                | a | 30                      | a   | 6                       | a |
| <b>Notes:</b><br>* Inhalation exposures to volatiles in the groundwater are equal to the ingestion exposures as per EPA Region IV policy<br>a Default exposure factors adapted from EPA, Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors" OSWER Directive 9285.6-03, March 25, 1991.<br>b Worker groundwater exposure is adapted from EPA Exposure Factor Handbook, August 1997 & is protective of 1/2 head (face), hands & forearms. (see Appendix L)<br>c Residential adult total body surface area is adapted from EPA Exposure Factor Handbook, August 1997 & is protective of all body parts. (see Appendix L)<br>d Residential child total body surface area is adapted from EPA Exposure Factor Handbook, August 1997 & is protective of all body parts. (see Appendix L)<br>e Calculation for Shower dermal exposure time: 10 minute event x 1 hour/60 minutes x 1 day/ 24 hours = 0.007 event/day<br>f Age-adjusted ingestion rate for residential adult: $IR_{adj} = \frac{IR_c \times ED_c}{BW_c} + \frac{IR_a \times (EDA - ED_c)}{BW_a}$ $= \frac{1 \times 6}{15} + \frac{2 \times (30-6)}{70}$ $= 1.09 \text{ (L-year)/(kg-day)}$ g Age-adjusted dermal contact for residential adult: $SA_{adj} = \frac{SA_c \times ED_c}{BW_c} + \frac{SA_a \times (EDA - ED_c)}{BW_a}$ $= \frac{6557 \times 6}{15} + \frac{20000 \times (30-6)}{70}$ $= 9480 \text{ (cm}^2\text{-year)/(kg)}$<br>cm <sup>2</sup> centimeters squared<br>days/year days per year<br>hours/day hours per day<br>kg kilograms<br>L/day liters per day<br>m <sup>3</sup> /day cubic meters per day<br>N/A Not applicable for this receptor |                                                   |                   |   |                         |     |                         |   |

A decorative graphic on the left side of the page consists of several overlapping rectangles. A large red rectangle is positioned in the middle-left. Above it, a dark gray rectangle extends from the top edge. Below the red rectangle, a light gray rectangle extends from the bottom edge. To the right of the red rectangle, a black rectangle is positioned at the bottom. The text 'Attachment F' and its subtitle are located to the right of the red rectangle.

# F

## Attachment F

Supporting Documentation  
for Review of 2000 HHRA  
Soils

**2000 MI RI Chapter 3 Background Sampling Summary - Excerpt**

|                   |                                                                                       |
|-------------------|---------------------------------------------------------------------------------------|
| <b>Table 3-10</b> | <b>Statistics for Detected Background Constituents in Background Sampling Program</b> |
| <b>Table 3-11</b> | <b>Background Data Modified by the BCT Background Sampling Program</b>                |

**TABLE 3-10**

Statistics for Detected Background Constituents in Background Sampling Program  
*Memphis Depot Main Installation RI*

| Matrix        | Constituent          | Units | No. Analyses | No. Detects | Minimum Detected | Maximum Detected | Mean Detected | Background Value   | Background Basis                                                                                                                                          |
|---------------|----------------------|-------|--------------|-------------|------------------|------------------|---------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Metals        |                      |       |              |             |                  |                  |               |                    |                                                                                                                                                           |
| Surface Water |                      |       |              |             |                  |                  |               |                    |                                                                                                                                                           |
|               | Aluminium, Total     | µg/L  | 22           | 18          | 266              | 16900            | 2538          | 5077               | V<br>A<br>L<br>U<br>E<br><br>D<br>E<br>T<br>E<br>C<br>T<br>E<br>D<br><br>M<br>E<br>A<br>N<br><br>C<br>E<br>N<br>T<br>R<br>A<br>L<br>T<br>R<br>E<br>N<br>D |
|               | Aluminum, Dissolved  |       | 22           | 2           | 191.0            | 280.0            | 235.5         | 471.0              |                                                                                                                                                           |
|               | Antimony, Dissolved  |       | 22           | 1           | 16.4             | 16.4             | 16.4          | 32.8 <sup>a</sup>  |                                                                                                                                                           |
|               | Arsenic, Total       |       | 22           | 11          | 6.6              | 13.6             | 9.0           | 18.0               |                                                                                                                                                           |
|               | Arsenic, Dissolved   |       | 22           | 6           | 5.1              | 7.4              | 6.2           | 12.4 <sup>a</sup>  |                                                                                                                                                           |
|               | Barium, Total        |       | 22           | 22          | 26.2             | 185.0            | 62.6          | 125.3              |                                                                                                                                                           |
|               | Barium, Dissolved    |       | 22           | 19          | 23.0             | 99.4             | 43.8          | 87.6               |                                                                                                                                                           |
|               | Calcium, Total       |       | 22           | 22          | 4410             | 34800            | 15900         | 31800              |                                                                                                                                                           |
|               | Calcium, Dissolved   |       | 22           | 22          | 3710             | 34200            | 15100         | 30200              |                                                                                                                                                           |
|               | Chromium, Dissolved  |       | 22           | 1           | 16.7             | 16.7             | 16.7          | 33.4 <sup>a</sup>  |                                                                                                                                                           |
|               | Chromium, Total      |       | 22           | 2           | 18.0             | 18.1             | 18.1          | 36.1 <sup>a</sup>  |                                                                                                                                                           |
|               | Manganese, Dissolved |       | 22           | 21          | 32               | 713              | 176           | 352                |                                                                                                                                                           |
|               | Nickel, Total        |       | 22           | 5           | 6.9              | 19.9             | 11.4          | 22.8 <sup>a</sup>  |                                                                                                                                                           |
|               | Nickel, Dissolved    |       | 22           | 1           | 118              | 118              | 118           | 236 <sup>a</sup>   |                                                                                                                                                           |
|               | Potassium, Total     |       | 22           | 19          | 733              | 6730             | 3640          | 7280               |                                                                                                                                                           |
|               | Potassium, Dissolved |       | 22           | 17          | 1050             | 6450             | 3360          | 6720               |                                                                                                                                                           |
|               | Selenium, Dissolved  |       | 22           | 2           | 1.4              | 1.6              | 1.5           | 3.0 <sup>a</sup>   |                                                                                                                                                           |
|               | Silver, Total        |       | 22           | 2           | 1.8              | 1.8              | 1.8           | 3.6 <sup>a</sup>   |                                                                                                                                                           |
|               | Sodium, Total        |       | 22           | 18          | 2890             | 17900            | 10700         | 21400              |                                                                                                                                                           |
|               | Sodium, Dissolved    |       | 22           | 17          | 6720             | 17500            | 10800         | 21600              |                                                                                                                                                           |
|               | Vanadium, Total      |       | 22           | 5           | 13.2             | 39.4             | 19.5          | 39.0               |                                                                                                                                                           |
|               | Zinc, Total          |       | 22           | 3           | 64.0             | 221.0            | 143.7         | 287.3              |                                                                                                                                                           |
|               | Zinc, Dissolved      |       | 22           | 1           | 205.0            | 205.0            | 205.0         | 410.0 <sup>a</sup> |                                                                                                                                                           |
| Surface Soil  |                      |       |              |             |                  |                  |               |                    |                                                                                                                                                           |
|               | Aluminum             | mg/kg | 22           | 22          | 8160             | 18500            | 11905         | 23810              | T<br>W<br>I<br>C<br>E<br><br>M<br>E<br>A<br>N<br><br>C<br>E<br>N<br>T<br>R<br>A<br>L<br>T<br>R<br>E<br>N<br>D                                             |
|               | Antimony             |       | 22           | 1           | 3.5              | 3.5              | 3.5           | 7.0 <sup>a</sup>   |                                                                                                                                                           |
|               | Arsenic              |       | 22           | 22          | 4.2              | 27.7             | 10.9          | 21.8               |                                                                                                                                                           |
|               | Barium               |       | 22           | 22          | 77               | 160              | 126           | 253                |                                                                                                                                                           |
|               | Beryllium            |       | 22           | 15          | 0.5              | 0.6              | 0.5           | 1.1 <sup>a</sup>   |                                                                                                                                                           |
|               | Cadmium              |       | 22           | 4           | 0.6              | 0.8              | 0.7           | 1.4 <sup>a</sup>   |                                                                                                                                                           |
|               | Calcium              |       | 22           | 22          | 424              | 30600            | 2920          | 5840               |                                                                                                                                                           |
|               | Chromium, Total      |       | 22           | 22          | 8.4              | 17.7             | 13.7          | 27.4               |                                                                                                                                                           |
|               | Cobalt               |       | 22           | 22          | 5.7              | 12.3             | 9.1           | 18.3               |                                                                                                                                                           |
|               | Copper               |       | 22           | 22          | 7.3              | 23.3             | 16.7          | 33.5               |                                                                                                                                                           |
|               | Iron                 |       | 22           | 22          | 10800            | 26100            | 18520         | 37040              |                                                                                                                                                           |
|               | Lead                 |       | 22           | 22          | 11.7             | 73.3             | 21.3          | 42.6               |                                                                                                                                                           |
|               | Magnesium            |       | 22           | 22          | 1110             | 3200             | 2308          | 4616               |                                                                                                                                                           |
|               | Manganese            |       | 22           | 22          | 330              | 1080             | 652           | 1304               |                                                                                                                                                           |
|               | Mercury              |       | 22           | 4           | 0.1              | 0.4              | 0.2           | 0.4                |                                                                                                                                                           |

TABLE 3-10

Statistics for Detected Background Constituents in Background Sampling Program  
*Memphis Depot Main Installation RI*

| Matrix          | Constituent     | Units | No. Analyses | No. Detects | Minimum Detected | Maximum Detected | Mean Detected | Background Value | Background Basis                                        |
|-----------------|-----------------|-------|--------------|-------------|------------------|------------------|---------------|------------------|---------------------------------------------------------|
|                 | Nickel          | mg/kg | 22           | 22          | 10.4             | 21.4             | 16.5          | 33               |                                                         |
|                 | Potassium       |       | 22           | 22          | 641              | 1460             | 1013          | 2025             |                                                         |
|                 | Selenium        |       | 22           | 3           | 0.3              | 0.5              | 0.4           | 0.8 <sup>a</sup> |                                                         |
|                 | Silver          |       | 22           | 1           | 1.0              | 1.0              | 1.0           | 2.0 <sup>a</sup> |                                                         |
|                 | Vanadium        |       | 22           | 22          | 17.7             | 35.2             | 26.1          | 52               |                                                         |
|                 | Zinc            |       | 22           | 22          | 35.6             | 89.5             | 62.8          | 126              |                                                         |
| Subsurface Soil |                 |       |              |             |                  |                  |               |                  |                                                         |
|                 | Aluminum        |       | 22           | 22          | 6820             | 14900            | 10915         | 21829            | V A L U E<br>D E T E C T E D<br>M E A N<br>C E<br>T W I |
|                 | Arsenic         |       | 22           | 22          | 3.1              | 14.1             | 8.5           | 17.0             |                                                         |
|                 | Barium          |       | 22           | 22          | 90               | 243              | 150           | 300              |                                                         |
|                 | Beryllium       |       | 22           | 14          | 0.5              | 0.7              | 0.6           | 1.2 <sup>a</sup> |                                                         |
|                 | Cadmium         |       | 22           | 3           | 0.7              | 0.7              | 0.7           | 1.4 <sup>a</sup> |                                                         |
|                 | Calcium         |       | 22           | 22          | 511              | 2630             | 1216          | 2432             |                                                         |
|                 | Chromium, Total |       | 22           | 22          | 8.7              | 18.0             | 13.2          | 26.4             |                                                         |
|                 | Cobalt          |       | 22           | 22          | 5.0              | 20.4             | 10.2          | 20.4             |                                                         |
|                 | Copper          |       | 22           | 22          | 7.4              | 23.1             | 16.3          | 32.7             |                                                         |
|                 | Iron            |       | 22           | 22          | 8340             | 24900            | 19240         | 38480            |                                                         |
|                 | Lead            |       | 22           | 22          | 6.9              | 22.7             | 12.0          | 23.9             |                                                         |
|                 | Magnesium       |       | 22           | 22          | 1200             | 3370             | 2450          | 4900             |                                                         |
|                 | Manganese       |       | 22           | 22          | 231              | 1580             | 770           | 1540             |                                                         |
|                 | Mercury         |       | 22           | 1           | 0.1              | 0.1              | 0.1           | 0.2 <sup>a</sup> |                                                         |
|                 | Nickel          |       | 22           | 22          | 9.0              | 22.4             | 18.3          | 36.6             |                                                         |
|                 | Potassium       |       | 22           | 22          | 483              | 1480             | 900           | 1800             |                                                         |
|                 | Selenium        |       | 22           | 1           | 0.3              | 0.3              | 0.3           | 0.6 <sup>a</sup> |                                                         |
|                 | Silver          |       | 22           | 2           | 0.4              | 0.6              | 0.5           | 1.0 <sup>a</sup> |                                                         |
|                 | Vanadium        |       | 22           | 22          | 15.0             | 31.7             | 25.6          | 51.3             |                                                         |
|                 | Zinc            |       | 22           | 22          | 30.9             | 79.5             | 57.0          | 114              |                                                         |
| Sediment        |                 |       |              |             |                  |                  |               |                  |                                                         |
|                 | Aluminum        |       | 22           | 22          | 490              | 14200            | 5042          | 10085            | T W I<br>C E<br>N T R A L<br>B A S I S                  |
|                 | Antimony        |       | 22           | 2           | 3.7              | 3.9              | 3.8           | 7.6 <sup>a</sup> |                                                         |
|                 | Arsenic         |       | 22           | 17          | 1.5              | 11.1             | 6.0           | 12.0             |                                                         |
|                 | Barium          |       | 22           | 22          | 3.7              | 137.0            | 59.0          | 118              |                                                         |
|                 | Beryllium       |       | 22           | 5           | 0.5              | 0.8              | 0.6           | 1.3              |                                                         |
|                 | Cadmium         |       | 22           | 3           | 1.3              | 38.2             | 14.5          | 28.9             |                                                         |
|                 | Calcium         |       | 22           | 20          | 134              | 56800            | 7430          | 14860            |                                                         |
|                 | Chromium, Total |       | 22           | 22          | 4.1              | 174              | 19            | 38               |                                                         |
|                 | Cobalt          |       | 22           | 14          | 1.2              | 10.8             | 6.8           | 13.6             |                                                         |
|                 | Copper          |       | 22           | 16          | 1.7              | 1250             | 135           | 271              |                                                         |
|                 | Iron            |       | 22           | 22          | 3330             | 30700            | 11540         | 23080            |                                                         |
|                 | Lead            |       | 22           | 21          | 1.7              | 291              | 36.0          | 72.0             |                                                         |
|                 | Magnesium       |       | 22           | 22          | 51.2             | 2950             | 1220          | 2440             |                                                         |

**TABLE 3-10**

Statistics for Detected Background Constituents in Background Sampling Program  
*Memphis Depot Main Installation RI*

| Matrix          | Constituent                      | Units | No. Analyses | No. Detects | Minimum Detected | Maximum Detected | Mean Detected | Background Value    | Background Basis |  |  |
|-----------------|----------------------------------|-------|--------------|-------------|------------------|------------------|---------------|---------------------|------------------|--|--|
| Groundwater     | Manganese                        | mg/kg | 22           | 22          | 59.3             | 2610             | 436           | 871                 | V A L U E        |  |  |
|                 | Mercury                          |       | 22           | 1           | 2.0              | 2.0              | 2.0           | 4.0 <sup>a</sup>    |                  |  |  |
|                 | Nickel                           |       | 22           | 13          | 5.3              | 37.4             | 15.2          | 30.5                |                  |  |  |
|                 | Potassium                        |       | 22           | 9           | 269              | 1080             | 780           | 1560 <sup>a</sup>   |                  |  |  |
|                 | Selenium                         |       | 22           | 4           | 0.4              | 1.5              | 0.8           | 1.7                 |                  |  |  |
|                 | Silver                           |       | 22           | 1           | 0.9              | 0.9              | 0.9           | 1.8                 |                  |  |  |
|                 | Sodium                           |       | 22           | 1           | 120              | 120              | 120           | 240                 |                  |  |  |
|                 | Thallium                         |       | 22           | 2           | 0.5              | 0.6              | 0.5           | 1.1 <sup>a</sup>    |                  |  |  |
|                 | Vanadium                         |       | 22           | 22          | 4.4              | 31.5             | 15.0          | 30.0                |                  |  |  |
|                 | Zinc                             |       | 22           | 22          | 8.4              | 7630             | 399           | 797                 |                  |  |  |
|                 | Aluminum                         | µg/L  | 12           | 5           | 235              | 2670             | 899.2         | 1798                | D E T E C T E D  |  |  |
|                 | Antimony                         |       | 12           | 1           | 17.2             | 17.2             | 17.2          | 34.4 <sup>a</sup>   |                  |  |  |
|                 | Barium                           |       | 12           | 12          | 42.9             | 307.0            | 111.9         | 223.8               |                  |  |  |
|                 | Beryllium                        |       | 12           | 2           | 0.2              | 0.4              | 0.3           | 0.6                 |                  |  |  |
|                 | Calcium                          |       | 12           | 12          | 9950.0           | 49200.0          | 26437.5       | 52875.0             |                  |  |  |
|                 | Chromium, Total                  |       | 12           | 2           | 20.3             | 34.0             | 27.2          | 54.4                |                  |  |  |
|                 | Cobalt                           |       | 12           | 5           | 2.2              | 19.6             | 12.4          | 24.8                |                  |  |  |
|                 | Copper                           |       | 12           | 4           | 2.0              | 315.0            | 81.3          | 162.6               |                  |  |  |
|                 | Iron                             |       | 12           | 9           | 598.0            | 7960.0           | 3364.0        | 6728.0              |                  |  |  |
|                 | Lead                             |       | 12           | 3           | 2.6              | 7.6              | 4.7           | 9.4 <sup>a</sup>    |                  |  |  |
|                 | Magnesium                        |       | 12           | 12          | 5250.0           | 24000.0          | 13022.5       | 26045.0             |                  |  |  |
|                 | Manganese                        |       | 12           | 11          | 17.2             | 917.0            | 280.0         | 560.0               |                  |  |  |
|                 | Nickel                           |       | 12           | 3           | 9.4              | 25.6             | 15.7          | 31.4                |                  |  |  |
|                 | Potassium                        |       | 12           | 9           | 849.0            | 4040.0           | 1747.7        | 3495.4              |                  |  |  |
|                 | Selenium                         |       | 12           | 1           | 2.9              | 2.9              | 2.9           | 5.8 <sup>a</sup>    |                  |  |  |
|                 | Sodium                           |       | 12           | 4           | 32300.0          | 74600.0          | 53325.0       | 106650 <sup>a</sup> |                  |  |  |
|                 | Vanadium                         |       | 12           | 4           | 14.8             | 7.3              | 3.0           | 6.0                 |                  |  |  |
| VOCs            |                                  |       |              |             |                  |                  |               |                     |                  |  |  |
| Surface Soil    |                                  |       |              |             |                  |                  |               |                     |                  |  |  |
|                 | Carbon Disulfide                 | µg/kg | 22           | 2           | 2                | 2                | 2             | 2                   | NP               |  |  |
|                 | Methyl ethyl Ketone (2-Butanone) |       | 22           | 1           | 2                | 2                | 2             | 2                   | NP               |  |  |
|                 | Toluene                          |       | 22           | 1           | 2                | 2                | 2             | 2                   | NP               |  |  |
|                 | Total Xylenes                    |       | 22           | 10          | 1                | 9                | 2.8           | 9                   | NP               |  |  |
| Subsurface Soil |                                  |       |              |             |                  |                  |               |                     |                  |  |  |
|                 | Carbon Disulfide                 |       | 22           | 2           | 1                | 2                | 1.5           | 2                   | NP               |  |  |
|                 | Total Xylenes                    |       | 22           | 4           | 1                | 2                | 1.5           | 2                   | NP               |  |  |
| Surface Water   |                                  |       |              |             |                  |                  |               |                     |                  |  |  |
|                 | Methyl ethyl Ketone (2-Butanone) | µg/L  | 22           | 5           | 1                | 2                | 1.6           | 2                   | NP               |  |  |
|                 | Total Xylenes                    |       | 22           | 2           | 1                | 1                | 1             | 1                   | NP               |  |  |
| Sediment        |                                  |       |              |             |                  |                  |               |                     |                  |  |  |
|                 | Chloromethane                    | µg/kg | 22           | 1           | 3                | 3                | 3             | 3                   | NP               |  |  |
|                 | Methyl ethyl Ketone (2-Butanone) |       | 22           | 10          | 1                | 10               | 4.8           | 10                  | NP               |  |  |



**TABLE 3-10**

Statistics for Detected Background Constituents in Background Sampling Program  
*Memphis Depot Main Installation RI*

| Matrix                 | Constituent               | Units | No. Analyses | No. Detects | Minimum Detected | Maximum Detected | Mean Detected | Background Value | Background Basis |
|------------------------|---------------------------|-------|--------------|-------------|------------------|------------------|---------------|------------------|------------------|
| <i>Groundwater</i>     | Toluene                   |       | 22           | 3           | 2                | 14               | 8.7           | 14               | NP               |
|                        | 1,1,1-Trichloroethane     | µg/L  | 12           | 1           | 1                | 1                | 1             | 1                | NP               |
|                        | 1,1,-Dichloroethene       |       | 12           | 1           | 2                | 2                | 2             | 2                | NP               |
|                        | Tetrachloroethene         |       | 12           | 1           | 1                | 1                | 1             | 1                | NP               |
|                        | Trichloroethylene         |       | 12           | 1           | 1                | 1                | 1             | 1                | NP               |
| <b>SVOCs</b>           |                           |       |              |             |                  |                  |               |                  |                  |
| <i>Surface Soil</i>    |                           |       |              |             |                  |                  |               |                  |                  |
|                        | Acenaphthylene            | µg/kg | 22           | 1           | 190              | 190              | 190           | 190              | NP               |
|                        | Anthracene                |       | 22           | 1           | 96               | 96               | 96            | 96               | NP               |
|                        | Benzo(a)anthracene        |       | 22           | 9           | 43               | 710              | 151           | 710              | NP               |
|                        | Benzo(a)pyrene            |       | 22           | 9           | 44               | 960              | 186           | 960              | NP               |
|                        | Benzo(b)fluoranthene      |       | 22           | 9           | 51               | 900              | 208           | 900              | NP               |
|                        | Benzo(g,h,i)perylene      |       | 22           | 9           | 37               | 820              | 169           | 820              | NP               |
|                        | Benzo(k)fluoranthene      |       | 22           | 9           | 45               | 780              | 192           | 780              | NP               |
|                        | Carbazole                 |       | 22           | 1           | 67               | 67               | 67            | 67               | NP               |
|                        | Chrysene                  |       | 22           | 10          | 40               | 940              | 190           | 940              | NP               |
|                        | Dibenz(a,h)anthracene     |       | 22           | 3           | 36               | 260              | 117           | 260              | NP               |
|                        | Fluoranthene              |       | 22           | 11          | 49               | 1600             | 310           | 1600             | NP               |
|                        | Ideno(1,2,3-c,d)pyrene    |       | 22           | 7           | 63               | 700              | 179           | 700              | NP               |
|                        | Phenathrene               |       | 22           | 9           | 37               | 610              | 159           | 610              | NP               |
|                        | Phenol                    |       | 22           | 5           | 52               | 14000            | 5238          | 14000            | NP               |
|                        | Pyrene                    |       | 22           | 11          | 50               | 1500             | 272           | 1500             | NP               |
| <i>Subsurface Soil</i> |                           |       |              |             |                  |                  |               |                  |                  |
|                        | Fluoranthene              |       | 22           | 2           | 44               | 45               | 45            | 45               | NP               |
|                        | Phenol                    |       | 22           | 6           | 580              | 19000            | 4295          | 19000            | NP               |
|                        | Pyrene                    |       | 22           | 2           | 39               | 42               | 41            | 42               | NP               |
| <i>Sediment</i>        |                           |       |              |             |                  |                  |               |                  |                  |
|                        | Acenaphthene              |       | 22           | 2           | 59               | 770              | 415           | 770              | NP               |
|                        | Anthracene                |       | 22           | 2           | 310              | 1600             | 955           | 1600             | NP               |
|                        | Benzo(a)anthracene        |       | 22           | 6           | 64               | 2900             | 820           | 2900             | NP               |
|                        | Benzo(a)pyrene            |       | 22           | 7           | 64               | 2500             | 632           | 2500             | NP               |
|                        | Benzo(b)fluoranthene      |       | 22           | 7           | 59               | 2600             | 669           | 2216.05          | LN               |
|                        | Benzo(g,h,i)perylene      |       | 22           | 7           | 48               | 1800             | 452           | 1800             | NP               |
|                        | Benzo(k)fluoranthene      |       | 22           | 7           | 75               | 2300             | 624           | 2300             | NP               |
|                        | bis(2-ethylexyl)phthalate |       | 22           | 1           | 480              | 480              | 480           | 480              | NP               |
|                        | Carbazole                 |       | 22           | 2           | 83               | 1100             | 592           | 1100             | NP               |
|                        | Chrysene                  | µg/kg | 22           | 8           | 88               | 3200             | 735           | 3200             | NP               |
|                        | Dibenzo(a,h)anthracene    |       | 22           | 2           | 130              | 700              | 415           | 700              | NP               |
|                        | Dibenzofuran              |       | 22           | 2           | 42               | 380              | 211           | 380              | NP               |
|                        | Di-n-Octylphthalate       |       | 22           | 1           | 47               | 47               | 47            | 47               | NP               |
|                        | Fluoranthene              |       | 22           | 10          | 60               | 7100             | 1294          | 7100             | NP               |
|                        | Fluorene                  |       | 22           | 2           | 130              | 870              | 500           | 870              | NP               |

**TABLE 3-10**

Statistics for Detected Background Constituents in Background Sampling Program  
*Memphis Depot Main Installation RI*

| Matrix                 | Constituent                               | Units | No. Analyses | No. Detects | Minimum Detected | Maximum Detected | Mean Detected | Background Value | Background Basis |
|------------------------|-------------------------------------------|-------|--------------|-------------|------------------|------------------|---------------|------------------|------------------|
|                        | Ideno(1,2,3-c,d)Pyrene                    |       | 22           | 7           | 42               | 1700             | 428           | 1700             | NP               |
|                        | Naphthalene                               |       | 22           | 1           | 130              | 130              | 130           | 130              | NP               |
|                        | Phenanthrene                              |       | 22           | 6           | 68               | 6900             | 1651          | 6900             | NP               |
|                        | Phenol                                    |       | 22           | 5           | 51               | 200              | 86            | 200              | NP               |
|                        | Pyrene                                    |       | 22           | 10          | 43               | 6800             | 1360          | 2882             | LN               |
| Groundwater            | Benzyl Butyl Phthalate                    | µg/L  | 12           | 1           | 2                | 2                | 2             | 4                | NP               |
| <b>Pesticides/PCBs</b> |                                           |       |              |             |                  |                  |               |                  |                  |
| <i>Surface Soil</i>    |                                           |       |              |             |                  |                  |               |                  |                  |
|                        | Alpha-Chlordane                           | µg/kg | 22           | 5           | 3.5              | 29.0             | 9.4           | 29.0             | NP               |
|                        | Dieldrin                                  |       | 22           | 14          | 3.3              | 530              | 114           | 530              | NP               |
|                        | Gamma-Chlordane                           |       | 22           | 5           | 2.3              | 26.0             | 11.0          | 26.0             | NP               |
|                        | Heptachlor Epoxide                        |       | 22           | 1           | 7.7              | 7.7              | 7.7           | 7.7              | NP               |
|                        | p,p'-dichlorodiphenyldichloroethane       |       | 22           | 1           | 6.7              | 6.7              | 6.7           | 6.7              | NP               |
|                        | p,p'-dichlorodiphenyldichloroethene       |       | 21           | 1           | 160              | 160              | 160           | 160              | NP               |
|                        | p,p'-dichlorodiphenyltrichloroethene      |       | 22           | 3           | 9.4              | 74.0             | 43.5          | 74.0             | NP               |
|                        | PCB-1260 (Arochlor 1260)                  |       | 22           | 2           | 100              | 110              | 105           | 110              | NP               |
| <i>Subsurface Soil</i> |                                           |       |              |             |                  |                  |               |                  |                  |
|                        | Alpha-Chlordane                           |       | 22           | 1           | 2.6              | 2.6              | 2.6           | 2.6              | NP               |
|                        | Dieldrin                                  |       | 22           | 3           | 3.5              | 370.0            | 127.0         | 370.0            | NP               |
|                        | Gamma-Chlordane                           |       | 22           | 1           | 2.2              | 2.2              | 2.2           | 2.2              | NP               |
|                        | p,p'- dichlorodiphenyldichloroethene      |       | 22           | 1           | 1.5              | 1.5              | 1.5           | 1.5              | NP               |
|                        | p,p'- dichlorodiphenyltrichloroethene     |       | 22           | 1           | 7.2              | 7.2              | 7.2           | 7.2              | NP               |
| <i>Sediment</i>        |                                           |       |              |             |                  |                  |               |                  |                  |
|                        | Alpha-chlordane                           |       | 21           | 4           | 3.6              | 5.2              | 4.5           | 5.2              | NP               |
|                        | Dieldrin                                  |       | 22           | 1           | 11.0             | 11.0             | 11.0          | 11.0             | NP               |
|                        | Gamma-Chlordane                           |       | 22           | 5           | 6.1              | 2000.0           | 417.0         | 2000.0           | NP               |
|                        | Heptachlor Epoxide                        |       | 22           | 1           | 230              | 230              | 230           | 230              | NP               |
|                        | p,p'- dichlorodiphenyldichloroethane      |       | 22           | 3           | 2.8              | 6.1              | 5.0           | 6.1              | NP               |
|                        | p,p'- dichlorodiphenyldichloroethene      |       | 22           | 2           | 5.8              | 7.2              | 6.5           | 7.2              | NP               |
| <b>Dioxin/Furans</b>   |                                           |       |              |             |                  |                  |               |                  |                  |
| <i>Surface Soil</i>    |                                           |       |              |             |                  |                  |               |                  |                  |
|                        | Octachlorodibenzofuran                    | µg/kg | 22           | 3           | 0.045            | 0.39             | 0.16          | 0.393            | NP               |
|                        | Octachlorodibenzo-p-Dioxin                |       | 22           | 22          | 0.747            | 23.33            | 5.52          | 9.72             | LN               |
|                        | 1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin |       | 22           | 6           | 0.071            | 0.39             | 0.14          | 0.390            | NP               |
|                        | Total Equivalency Factor                  |       | 22           | 22          | 0.001            | 0.02             | 0.01          | 0.010            | LN               |
| <i>Subsurface Soil</i> |                                           |       |              |             |                  |                  |               |                  |                  |
|                        | Octachlorodibenzo-p-Dioxin                |       | 22           | 17          | 0.209            | 9.44             | 2.99          | 9.44             | NP               |
|                        | Total Equivalency Factor                  |       | 22           | 17          | 0.000            | 0.01             | 0.00          | 0.006            | LN               |
| <i>Surface Water</i>   |                                           |       |              |             |                  |                  |               |                  |                  |
|                        | 2,3,7,8-Tetrachlorodibenzofuran           | ng/L  | 22           | 6           | 0.007            | 0.03             | 0.02          | 0.031            | NP               |
|                        | 2,3,4,7,8-Pentachlorodibenzofuran         |       | 22           | 2           | 0.024            | 0.05             | 0.04          | 0.050            | NP               |
|                        | 1,2,3,7,8-Pentachlorodibenzofuran         |       | 22           | 3           | 0.027            | 0.06             | 0.04          | 0.057            | NP               |

**TABLE 3-10**

Statistics for Detected Background Constituents in Background Sampling Program  
*Memphis Depot Main Installation RI*

| Matrix          | Constituent                               | Units | No. Analyses | No. Detects | Minimum Detected | Maximum Detected | Mean Detected | Background Value | Background Basis |
|-----------------|-------------------------------------------|-------|--------------|-------------|------------------|------------------|---------------|------------------|------------------|
| <i>Sediment</i> | 1,2,3,7,8-Pentachlorodibenzo-p-Dioxin     |       | 22           | 1           | 0.046            | 0.05             | 0.05          | 0.046            | NP               |
|                 | Octachlorodibenzo-p-Dioxin                |       | 22           | 15          | 0.206            | 1.23             | 0.58          | 1.225            | NP               |
|                 | 1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin |       | 22           | 4           | 0.043            | 0.18             | 0.10          | 0.184            | NP               |
|                 | Total Equivalency Factor                  |       | 22           | 15          | 0.000            | 0.03             | 0.00          | 0.018            | LN               |
|                 | 2,3,4,7,8-Pentachlorodibenzofuran         | µg/kg | 22           | 1           | 0.002            | 0.002            | 0.002         | 0.002            | NP               |
|                 | Octachlorodibenzo-p-Dioxin                |       | 22           | 11          | 0.431            | 8.56             | 2.62          | 8.56             | NP               |
|                 | 1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin |       | 22           | 3           | 0.064            | 0.58             | 0.24          | 0.583            | NP               |
|                 | Total Equivalency Factor                  |       | 22           | 11          | 0.000            | 0.009            | 0.003         | 0.009            | NP               |

**Notes:**

<sup>a</sup>Because of the low number of detected concentrations, the background value, based on twice the mean detected value, exceeds the maximum detected value.

LN Background is the UCL95 value based on a lognormal distribution.

µg/kg Micrograms per kilogram

µg/L Micrograms per liter

mg/kg Milligrams per kilogram

ng/L Nanograms per liter

NO Background is the UCL95 value based on a normal distribution.

NP Background is the maximum value based on nonparametric distribution.

PCB Polychlorinated biphenyl

SVOC Semivolatile organic compound

UCL95 95th percentile upper confidence level on mean concentration

VOC Volatile organic compound

**TABLE 3-11**

Background Data Modified by the BCT Background Sampling Program  
*Memphis Depot Main Installation RI*

| Chemical           | Matrix | Units | Initial Background | Modified Background | Comments                                                                                                                |
|--------------------|--------|-------|--------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------|
| Arsenic            | SB     | mg/kg | <b>17</b>          |                     |                                                                                                                         |
| Arsenic            | SD     | mg/kg | <b>12</b>          |                     | 17 detections. No outliers.                                                                                             |
| Arsenic            | SS     | mg/kg | 21.8               | <b>16.5</b>         | Off-site locations only. Dropped outlier of 27.7.                                                                       |
| Arsenic            | SW     | µg/L  | <b>18</b>          |                     | No outliers                                                                                                             |
| Arsenic, Dissolved | SW     | µg/L  | <b>12.4</b>        |                     | No outliers                                                                                                             |
| Barium             | SB     | mg/kg | <b>300</b>         |                     | No outliers                                                                                                             |
| Barium             | SS     | mg/kg | 253                | <b>234</b>          | Off-site locations only.                                                                                                |
| Beryllium          | SS     | mg/kg | <b>1.1</b>         |                     | No outliers. Perimeter and off-site values nearly identical.                                                            |
| Cadmium            | SD     | mg/kg | <b>28.9</b>        |                     | Only 3 detections.                                                                                                      |
| Chromium           | SB     | mg/kg | <b>26.4</b>        |                     | No outliers.                                                                                                            |
| Chromium           | SD     | mg/kg | 38                 | <b>20</b>           | Dropped 2 outliers (174 and 40).                                                                                        |
| Chromium           | SS     | mg/kg | 27.4               | <b>24.8</b>         | Based on off-site mean of 12.4.                                                                                         |
| Copper             | SD     | mg/kg | 271                | <b>58</b>           | Dropped 2 outliers (512 and 1250 -- both are J qualified)                                                               |
| Dieldrin           | SS     | µg/kg | 530                | <b>86</b>           | Nonparametric distribution -- Maximum value proposed. Alternate value is maximum of three off-site dieldrin detections. |
| p,p'-DDD           | SD     | µg/kg | <b>6.1</b>         |                     |                                                                                                                         |
| p,p'-DDD           | SS     | µg/kg | <b>6.7</b>         |                     |                                                                                                                         |
| p,p'-DDE           | SD     | µg/kg | <b>7.2</b>         |                     |                                                                                                                         |
| p,p'-DDE           | SS     | µg/kg | <b>160</b>         |                     |                                                                                                                         |
| p,p'-DDT           | SS     | µg/kg | <b>74</b>          |                     |                                                                                                                         |
| Lead               | SD     | mg/kg | 69                 | <b>35.2</b>         | Removed 2 outliers.                                                                                                     |
| Lead               | SS     | mg/kg | 42.6               | <b>30</b>           | Off-site values only with 73.3 mg/kg outlier removed.                                                                   |
| Lead               | SW     | µg/L  | <b>18.6</b>        |                     | Twice mean detected. No outliers.                                                                                       |
| Lead, Dissolved    | SW     | µg/L  | <b>11.3</b>        |                     | Maximum detected. Only one detected.                                                                                    |
| Mercury            | SD     | mg/kg | <b>4</b>           |                     | Only one detection.                                                                                                     |
| Nickel             | SS     | mg/kg | 33                 | <b>30</b>           | No outliers. Off-site values only.                                                                                      |
| Nickel             | SB     | mg/kg | <b>37</b>          |                     | No positive outliers.                                                                                                   |
| Vanadium           | SS     | mg/kg | 52                 | <b>48.4</b>         | No outliers. Off-site values only.                                                                                      |

## Notes:

Values presented in bold-face were used in evaluation of Depot data.

SS = Surface Soil

SB = Subsurface Soil

SW = Surface Water

SD = Sediment

## **TABLES**

**(Prepared by HDR)**

|                 |                                                                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Table 1a</b> | <b>Comparison of Soil Analytical Results to USEPA Soil Regional Screening Levels (RSLs) for all FUs</b>                                                   |
| <b>Table 1b</b> | <b>Calculation of Screening Risks and Hazards by using Soil Analytical Results compared to Soil RSLs for all FUs</b>                                      |
| <b>Table 1c</b> | <b>Cumulative Risks and Hazards for Soil for all FUs</b>                                                                                                  |
| <b>Table 2</b>  | <b>Removal Action Building 949 in FU-4 – Comparison of Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria</b>               |
| <b>Table 3</b>  | <b>Removal Action Parcels 35 &amp; 28 in FU-3 – Comparison of Area B Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria</b> |
| <b>Table 4</b>  | <b>Removal Action Parcels 35 &amp; 28 in FU-3 – Comparison of Trench Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria</b> |

Table 1a

Comparison of 2000 MIR RI Soil Analytical Results to Human Health Screening Criteria for all FUs  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee

| FU             | Constituent Group | Parameter                    | CASRN      | Units | USEPA RSLs (TR of 1E-06, THQ of 0.1) |        |                 |         | Exposure Point Concentrations |                    |
|----------------|-------------------|------------------------------|------------|-------|--------------------------------------|--------|-----------------|---------|-------------------------------|--------------------|
|                |                   |                              |            |       | Residential Soil                     |        | Industrial Soil |         | EPC Soil (0-2 ft)             | EPC Soil (0-10 ft) |
|                |                   |                              |            |       | Value                                | Basis  | Value           | Basis   |                               |                    |
| 1              | TPH               | Total Petroleum Hydrocarbons | TPH        | mg/kg | 8.2                                  | n      | 42              | n       | 64                            | 64                 |
| 1              | SVOC              | Benzo(a)anthracene           | 56-55-3    | mg/kg | 1.1                                  | c      | 21              | c       | 11                            | 18                 |
| 1              | SVOC              | Benzo(a)pyrene               | 50-32-8    | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 13                            | 19                 |
| 1              | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | mg/kg | 1.1                                  | c      | 21              | c       | 13                            | 20                 |
| 1              | SVOC              | Benzo(k)fluoranthene         | 207-08-9   | mg/kg | 11                                   | c      | 210             | c       | 13                            | 21                 |
| 1              | SVOC              | Carbazole                    | 86-74-8    | mg/kg | NA                                   |        | NA              |         | 3.1                           | 0.97               |
| 1              | SVOC              | Chrysene                     | 218-01-9   | mg/kg | 110                                  | c      | 2100            | c       | 14                            | 26                 |
| 1              | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | mg/kg | 0.11                                 | c      | 2.1             | c       | 3                             | 2.1                |
| 1              | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | mg/kg | 1.1                                  | c      | 21              | c       | 9                             | 12                 |
| 1              | Pesticide         | 4,4'-DDE                     | 72-55-9    | mg/kg | 2                                    | c**    | 9.3             | c**     | 5.8                           | 3.2                |
| 1              | Pesticide         | 4,4'-DDT                     | 50-29-3    | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 2.3                           | 3.2                |
| 1              | Pesticide         | Dieldrin                     | 60-57-1    | mg/kg | 0.034                                | c**    | 0.14            | c*      | 0.81                          | 4                  |
| 1              | PCB               | PCB-1260 (Aroclor 1260)      | 11096-82-5 | mg/kg | 0.24                                 | c      | 0.99            | c       | 3.2                           | 6.3                |
| 1              | Inorganic         | Antimony                     | 7440-36-0  | mg/kg | 3.1                                  | n      | 47              | n       | 4.6                           | 2.4                |
| 1              | Inorganic         | Arsenic                      | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 26                            | 15                 |
| 1              | Inorganic         | Mercury                      | 7439-97-6  | mg/kg | 1.1                                  | n      | 4.6             | ns      | 0.12                          | 0.076              |
| 2-Surface Soil | Inorganic         | Arsenic                      | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 29                            | Not Available      |
| 2-Surface Soil | Inorganic         | Chromium (Total)             | 7440-47-3  | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | 22                            | Not Available      |
| 2-Surface Soil | Inorganic         | Copper                       | 7440-50-8  | mg/kg | 310                                  | n      | 4700            | n       | 31                            | Not Available      |
| 2-Surface Soil | Inorganic         | Lead                         | 7439-92-1  | mg/kg | 400                                  | L      | 800             | L       | 76                            | Not Available      |
| 2-Surface Soil | Inorganic         | Manganese                    | 7439-96-5  | mg/kg | 180                                  | n      | 2600            | n       | 983                           | Not Available      |
| 2-Surface Soil | Inorganic         | Nickel                       | 7440-02-0  | mg/kg | 150                                  | n      | 2200            | n       | 26                            | Not Available      |
| 2-Surface Soil | Pesticide         | Alpha-Chlordane              | 5103-71-9  | mg/kg | 1.7                                  | c**    | 7.7             | c**     | 0.23                          | Not Available      |
| 2-Surface Soil | Pesticide         | DDE                          | 72-55-9    | mg/kg | 2                                    | c**    | 9.3             | c**     | 0.8                           | Not Available      |
| 2-Surface Soil | Pesticide         | DDT                          | 50-29-3    | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 0.96                          | Not Available      |
| 2-Surface Soil | Pesticide         | Dieldrin                     | 60-57-1    | mg/kg | 0.034                                | c**    | 0.14            | c*      | 2                             | Not Available      |
| 2-Surface Soil | Pesticide         | Gamma-Chlordane              | 5566-34-7  | mg/kg | 1.7                                  | c**    | 7.7             | c**     | 0.27                          | Not Available      |
| 2-Surface Soil | SVOC              | Benzo(a)anthracene           | 56-55-3    | mg/kg | 1.1                                  | c      | 21              | c       | 0.25                          | Not Available      |
| 2-Surface Soil | SVOC              | Benzo(a)pyrene               | 50-32-8    | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 0.26                          | Not Available      |
| 2-Surface Soil | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | mg/kg | 1.1                                  | c      | 21              | c       | 0.28                          | Not Available      |
| 2-Ballpark     | Inorganic         | Arsenic                      | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 22                            | Not Available      |
| 2-Ballpark     | Inorganic         | Chromium (Total)             | 7440-47-3  | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | 19                            | Not Available      |
| 2-Ballpark     | Inorganic         | Copper                       | 7440-50-8  | mg/kg | 310                                  | n      | 4700            | n       | 25                            | Not Available      |
| 2-Ballpark     | Inorganic         | Lead                         | 7439-92-1  | mg/kg | 400                                  | L      | 800             | L       | 49                            | Not Available      |
| 2-Ballpark     | Inorganic         | Manganese                    | 7439-96-5  | mg/kg | 180                                  | n      | 2600            | n       | 970                           | Not Available      |
| 2-Ballpark     | Inorganic         | Nickel                       | 7440-02-0  | mg/kg | 150                                  | n      | 2200            | n       | 21                            | Not Available      |
| 2-Ballpark     | Pesticide         | DDE                          | 72-55-9    | mg/kg | 2                                    | c**    | 9.3             | c**     | 0.09                          | Not Available      |
| 2-Ballpark     | Pesticide         | DDT                          | 50-29-3    | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 0.07                          | Not Available      |
| 2-Ballpark     | Pesticide         | Dieldrin                     | 60-57-1    | mg/kg | 0.034                                | c**    | 0.14            | c*      | 1                             | Not Available      |
| 2-Ballpark     | SVOC              | Benzo(a)anthracene           | 56-55-3    | mg/kg | 1.1                                  | c      | 21              | c       | 0.08                          | Not Available      |
| 2-Ballpark     | SVOC              | Benzo(a)pyrene               | 50-32-8    | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 0.08                          | Not Available      |
| 2-Ballpark     | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | mg/kg | 1.1                                  | c      | 21              | c       | 0.09                          | Not Available      |
| 2-Playground   | Inorganic         | Arsenic                      | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 19                            | Not Available      |
| 2-Playground   | Inorganic         | Chromium (Total)             | 7440-47-3  | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | 16                            | Not Available      |
| 2-Playground   | Inorganic         | Copper                       | 7440-50-8  | mg/kg | 310                                  | n      | 4700            | n       | 55                            | Not Available      |

Table 1a

Comparison of 2000 MIR RI Soil Analytical Results to Human Health Screening Criteria for all FUs  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee

| FU            | Constituent Group | Parameter                    | CASRN     | Units | USEPA RSLs (TR of 1E-06, THQ of 0.1) |        |                 |         | Exposure Point Concentrations |                    |
|---------------|-------------------|------------------------------|-----------|-------|--------------------------------------|--------|-----------------|---------|-------------------------------|--------------------|
|               |                   |                              |           |       | Residential Soil                     |        | Industrial Soil |         | EPC Soil (0-2 ft)             | EPC Soil (0-10 ft) |
|               |                   |                              |           |       | Value                                | Basis  | Value           | Basis   |                               |                    |
| 2-Playground  | Inorganic         | Lead                         | 7439-92-1 | mg/kg | 400                                  | L      | 800             | L       | 69                            | Not Available      |
| 2-Playground  | Inorganic         | Manganese                    | 7439-96-5 | mg/kg | 180                                  |        | 2600            |         | 899                           | Not Available      |
| 2-Playground  | Inorganic         | Nickel                       | 7440-02-0 | mg/kg | 150                                  | n      | 2200            | n       | 21                            | Not Available      |
| 2-Playground  | Pesticide         | DDE                          | 72-55-9   | mg/kg | 2                                    | c**    | 9.3             | c**     | 0.43                          | Not Available      |
| 2-Playground  | Pesticide         | DDT                          | 50-29-3   | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 0.2                           | Not Available      |
| 2-Playground  | Pesticide         | Dieldrin                     | 60-57-1   | mg/kg | 0.034                                | c**    | 0.14            | c*      | 0.71                          | Not Available      |
| 2-Playground  | SVOC              | Benzo(a)anthracene           | 56-55-3   | mg/kg | 1.1                                  | c      | 21              | c       | 0.57                          | Not Available      |
| 2-Playground  | SVOC              | Benzo(a)pyrene               | 50-32-8   | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 0.44                          | Not Available      |
| 2-Playground  | SVOC              | Benzo(b)fluoranthene         | 205-99-2  | mg/kg | 1.1                                  | c      | 21              | c       | 0.46                          | Not Available      |
| 2-Golf Course | Inorganic         | Arsenic                      | 7440-38-2 | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 43                            | Not Available      |
| 2-Golf Course | Inorganic         | Chromium (Total)             | 7440-47-3 | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | 26                            | Not Available      |
| 2-Golf Course | Inorganic         | Copper                       | 7440-50-8 | mg/kg | 310                                  | n      | 4700            | n       | 29                            | Not Available      |
| 2-Golf Course | Inorganic         | Lead                         | 7439-92-1 | mg/kg | 400                                  | L      | 800             | L       | 123                           | Not Available      |
| 2-Golf Course | Inorganic         | Manganese                    | 7439-96-5 | mg/kg | 180                                  |        | 2600            |         | 1860                          | Not Available      |
| 2-Golf Course | Inorganic         | Nickel                       | 7440-02-0 | mg/kg | 150                                  | n      | 2200            | n       | 32                            | Not Available      |
| 2-Golf Course | Pesticide         | Alpha-Chlordane              | 5103-71-9 | mg/kg | 1.7                                  | c**    | 7.7             | c**     | 0.35                          | Not Available      |
| 2-Golf Course | Pesticide         | DDE                          | 72-55-9   | mg/kg | 2                                    | c**    | 9.3             | c**     | 1                             | Not Available      |
| 2-Golf Course | Pesticide         | DDT                          | 50-29-3   | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 1                             | Not Available      |
| 2-Golf Course | Pesticide         | Dieldrin                     | 60-57-1   | mg/kg | 0.034                                | c**    | 0.14            | c*      | 3                             | Not Available      |
| 2-Golf Course | Pesticide         | Gamma-Chlordane              | 5566-34-7 | mg/kg | 1.7                                  | c**    | 7.7             | c**     | 0.4                           | Not Available      |
| 2-Golf Course | SVOC              | Benzo(a)anthracene           | 56-55-3   | mg/kg | 1.1                                  | c      | 21              | c       | 0.23                          | Not Available      |
| 2-Golf Course | SVOC              | Benzo(a)pyrene               | 50-32-8   | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 0.23                          | Not Available      |
| 2-Golf Course | SVOC              | Benzo(b)fluoranthene         | 205-99-2  | mg/kg | 1.1                                  | c      | 21              | c       | 0.28                          | Not Available      |
| 3             | TPH               | Total Petroleum Hydrocarbons | TPH       | mg/kg | 8.2                                  | n      | 42              | n       | 274                           | 274                |
| 3             | SVOC              | Benzo(a)anthracene           | 56-55-3   | mg/kg | 1.1                                  | c      | 21              | c       | 1.4                           | 0.69               |
| 3             | SVOC              | Benzo(a)pyrene               | 50-32-8   | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 1.3                           | 0.65               |
| 3             | SVOC              | Benzo(b)fluoranthene         | 205-99-2  | mg/kg | 1.1                                  | c      | 21              | c       | 1.4                           | 0.68               |
| 3             | SVOC              | Benzo(k)fluoranthene         | 207-08-9  | mg/kg | 11                                   | c      | 210             | c       | 1.4                           | 0.69               |
| 3             | SVOC              | Carbazole                    | 86-74-8   | mg/kg | NA                                   |        | NA              |         | 0.55                          | 0.34               |
| 3             | SVOC              | Chrysene                     | 218-01-9  | mg/kg | 110                                  | c      | 2100            | c       | 1.6                           | 0.74               |
| 3             | SVOC              | Dibenz(a,h)anthracene        | 53-70-3   | mg/kg | 0.11                                 | c      | 2.1             | c       | 0.54                          | 0.36               |
| 3             | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5  | mg/kg | 1.1                                  | c      | 21              | c       | 1.1                           | 0.56               |
| 3             | SVOC              | Pentachlorophenol            | 87-86-5   | mg/kg | 1                                    | c*     | 4               | c*      | 0.24                          | 0.16               |
| 3             | Pesticide         | Dieldrin                     | 60-57-1   | mg/kg | 0.034                                | c**    | 0.14            | c*      | 0.037                         | 0.017              |
| 3             | Inorganic         | Antimony                     | 7440-36-0 | mg/kg | 3.1                                  | n      | 47              | n       | 3                             | 3.5                |
| 3             | Inorganic         | Arsenic                      | 7440-38-2 | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 13                            | 12                 |
| 3             | Inorganic         | Cadmium                      | 7440-43-9 | mg/kg | 7.1                                  | n      | 98              | n       | 1.3                           | 0.89               |
| 3             | Inorganic         | Chromium (Total)             | 7440-47-3 | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | 72                            | 49                 |
| 3             | Inorganic         | Copper                       | 7440-50-8 | mg/kg | 310                                  | n      | 4700            | n       | Not Available                 | 31                 |
| 3             | Inorganic         | Lead                         | 7439-92-1 | mg/kg | 400                                  | L      | 800             | L       | 311                           | 143                |
| 3             | Inorganic         | Mercury                      | 7439-97-6 | mg/kg | 1.1                                  | n      | 4.6             | ns      | 0.062                         | 0.056              |
| 3             | Inorganic         | Selenium                     | 7782-49-2 | mg/kg | 39                                   | n      | 580             | n       | 0.82                          | 0.72               |
| 3             | Inorganic         | Vanadium                     | 7440-62-2 | mg/kg | 39                                   | n      | 580             | n       | 26                            | 27                 |
| 3             | Inorganic         | Zinc                         | 7440-66-6 | mg/kg | 2300                                 | n      | 35000           | n       | 273                           | 170                |
| 3             | Dioxin            | TCDD Equivalent              | NA        | mg/kg | 0.0000048                            | c**    | 0.000022        | c**     | 0.000013                      | 0.00001            |

Table 1a

Comparison of 2000 MIR RI Soil Analytical Results to Human Health Screening Criteria for all FUs

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Parameter                    | CASRN      | Units | USEPA RSLs (TR of 1E-06, THQ of 0.1) |        |                 |         | Exposure Point Concentrations |                    |
|----|-------------------|------------------------------|------------|-------|--------------------------------------|--------|-----------------|---------|-------------------------------|--------------------|
|    |                   |                              |            |       | Residential Soil                     |        | Industrial Soil |         | EPC Soil (0-2 ft)             | EPC Soil (0-10 ft) |
|    |                   |                              |            |       | Value                                | Basis  | Value           | Basis   |                               |                    |
| 4  | VOC               | 1,1,2,2-Tetrachloroethane    | 79-34-5    | mg/kg | 0.6                                  | c      | 2.7             | c       | 0.0059                        | 0.0063             |
| 4  | VOC               | 1,2-Dichloroethylene, Total  | 540-59-0   | mg/kg | 160 / 16                             | n / n  | 2,300 / 230     | ns / n  | Not Available                 | 0.0066             |
| 4  | VOC               | Trichloroethylene            | 79-01-6    | mg/kg | 0.41                                 | n      | 1.9             | n       | Not Available                 | 0.0064             |
| 4  | TPH               | Total Petroleum Hydrocarbons | TPH        | mg/kg | 8.2                                  | n      | 42              | n       | 1300                          | 1300               |
| 4  | SVOC              | Benzo(a)anthracene           | 56-55-3    | mg/kg | 1.1                                  | c      | 21              | c       | 0.54                          | 0.32               |
| 4  | SVOC              | Benzo(a)pyrene               | 50-32-8    | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 0.54                          | 0.32               |
| 4  | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | mg/kg | 1.1                                  | c      | 21              | c       | 0.54                          | 0.32               |
| 4  | SVOC              | Carbazole                    | 86-74-8    | mg/kg | NA                                   |        | NA              |         | 0.26                          | 0.23               |
| 4  | SVOC              | Chrysene                     | 218-01-9   | mg/kg | 110                                  | c      | 2100            | c       | 0.58                          | 0.33               |
| 4  | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | mg/kg | 0.11                                 | c      | 2.1             | c       | 0.37                          | 0.27               |
| 4  | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | mg/kg | 1.1                                  | c      | 21              | c       | 0.49                          | 0.31               |
| 4  | SVOC              | Pentachlorophenol            | 87-86-5    | mg/kg | 1                                    | c*     | 4               | c*      | 0.12                          | 0.14               |
| 4  | Pesticide         | Chlordane, alpha             | 5103-71-9  | mg/kg | 1.7                                  | c**    | 7.7             | c**     | 0.074                         | 0.011              |
| 4  | Pesticide         | 4,4'-DDE                     | 72-55-9    | mg/kg | 2                                    | c**    | 9.3             | c**     | 0.15                          | 0.021              |
| 4  | Pesticide         | 4,4'-DDT                     | 50-29-3    | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 0.31                          | 0.035              |
| 4  | Pesticide         | Dieldrin                     | 60-57-1    | mg/kg | 0.034                                | c**    | 0.14            | c*      | 0.39                          | 0.034              |
| 4  | Pesticide         | Chlordane, gamma             | 5566-34-7  | mg/kg | 1.7                                  | c**    | 7.7             | c**     | 0.087                         | 0.012              |
| 4  | PCB               | PCB-1260 (Aroclor 1260)      | 11096-82-5 | mg/kg | 0.24                                 | c      | 0.99            | c       | 6.6                           | 0.87               |
| 4  | Inorganic         | Aluminum                     | 7429-90-5  | mg/kg | 7700                                 | n      | 110000          | nm      | 12727                         | 12390              |
| 4  | Inorganic         | Antimony                     | 7440-36-0  | mg/kg | 3.1                                  | n      | 47              | n       | 4.3                           | 3.5                |
| 4  | Inorganic         | Arsenic                      | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 17                            | 16                 |
| 4  | Inorganic         | Chromium (Total)             | 7440-47-3  | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | 67                            | 38                 |
| 4  | Inorganic         | Cobalt                       | 7440-48-4  | mg/kg | 2.3                                  | n      | 35              | n       | Not Available                 | 10                 |
| 4  | Inorganic         | Copper                       | 7440-50-8  | mg/kg | 310                                  | n      | 4700            | n       | 34                            | 29                 |
| 4  | Inorganic         | Lead                         | 7439-92-1  | mg/kg | 400                                  | L      | 800             | L       | 162                           | 65                 |
| 4  | Inorganic         | Manganese                    | 7439-96-5  | mg/kg | 180                                  |        | 2600            |         | 718                           | 787                |
| 4  | Inorganic         | Selenium                     | 7782-49-2  | mg/kg | 39                                   | n      | 580             | n       | 1.1                           | 0.8                |
| 4  | Inorganic         | Thallium                     | 7440-28-0  | mg/kg | 0.078                                | n      | 1.2             | n       | 0.98                          | 0.93               |
| 4  | Inorganic         | Zinc                         | 7440-66-6  | mg/kg | 2300                                 | n      | 35000           | n       | 222                           | 141                |
| 4  | Dioxin            | TCDD Equivalent              | NA         | mg/kg | 0.0000048                            | c**    | 0.000022        | c**     | 0.00047                       | 0.00096            |
| 5  | VOC               | 1,2-Dichloroethylene, Total  | 540-59-0   | mg/kg | 160 / 16                             | n / n  | 2,300 / 230     | ns / n  | Not Available                 | 0.002              |
| 5  | VOC               | Trichloroethylene            | 79-01-6    | mg/kg | 0.41                                 | n      | 1.9             | n       | Not Available                 | 0.012              |
| 5  | SVOC              | 4-Methylphenol (p-Cresol)    | 106-44-5   | mg/kg | 630                                  | n      | 8200            | n       | 0.056                         | 0.056              |
| 5  | SVOC              | Benzo(a)anthracene           | 56-55-3    | mg/kg | 1.1                                  | c      | 21              | c       | 9                             | 2.1                |
| 5  | SVOC              | Benzo(a)pyrene               | 50-32-8    | mg/kg | 0.11                                 | c*     | 2.1             | c*      | 8.4                           | 2                  |
| 5  | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | mg/kg | 1.1                                  | c      | 21              | c       | 8.1                           | 2                  |
| 5  | SVOC              | Benzo(k)fluoranthene         | 207-08-9   | mg/kg | 11                                   | c      | 210             | c       | 7.8                           | 1.9                |
| 5  | SVOC              | Carbazole                    | 86-74-8    | mg/kg | NA                                   |        | NA              |         | 1.1                           | 0.46               |
| 5  | SVOC              | Chrysene                     | 218-01-9   | mg/kg | 110                                  | c      | 2100            | c       | 10                            | 2                  |
| 5  | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | mg/kg | 0.11                                 | c      | 2.1             | c       | 1.3                           | 0.61               |
| 5  | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | mg/kg | 1.1                                  | c      | 21              | c       | 6.5                           | 1.6                |
| 5  | SVOC              | Pentachlorophenol            | 87-86-5    | mg/kg | 1                                    | c*     | 4               | c*      | 0.32                          | 0.23               |
| 5  | Pesticide         | Dieldrin                     | 60-57-1    | mg/kg | 0.034                                | c**    | 0.14            | c*      | 1.1                           | 1.1                |
| 5  | Inorganic         | Antimony                     | 7440-36-0  | mg/kg | 3.1                                  | n      | 47              | n       | 6.3                           | 4.3                |
| 5  | Inorganic         | Arsenic                      | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | 15                            | 14                 |



Table 1a

Comparison of 2000 MIR RI Soil Analytical Results to Human Health Screening Criteria for all FUs

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Parameter               | CASRN      | Units | USEPA RSLs (TR of 1E-06, THQ of 0.1) |        |                 |         | Exposure Point Concentrations |                    |
|----|-------------------|-------------------------|------------|-------|--------------------------------------|--------|-----------------|---------|-------------------------------|--------------------|
|    |                   |                         |            |       | Residential Soil                     |        | Industrial Soil |         | EPC Soil (0-2 ft)             | EPC Soil (0-10 ft) |
|    |                   |                         |            |       | Value                                | Basis  | Value           | Basis   |                               |                    |
| 5  | Inorganic         | Cadmium                 | 7440-43-9  | mg/kg | 7.1                                  | n      | 98              | n       | Not Available                 | 2.6                |
| 5  | Inorganic         | Chromium (Total)        | 7440-47-3  | mg/kg | 12,000 / 0.3                         | n / c* | 180,000 / 6.3   | nm / c* | Not Available                 | <u>25</u>          |
| 5  | Inorganic         | Copper                  | 7440-50-8  | mg/kg | 310                                  | n      | 4700            | n       | Not Available                 | 26                 |
| 5  | Inorganic         | Manganese               | 7439-96-5  | mg/kg | 180                                  |        | 2600            |         | Not Available                 | 1147               |
| 6  | VOC               | Benzene                 | 71-43-2    | mg/kg | 1.2                                  | c**    | 5.1             | c**     | Not Available                 | 0.068              |
| 6  | VOC               | Methylene chloride      | 75-09-2    | mg/kg | 35                                   | n      | 320             | n       | Not Available                 | 0.009              |
| 6  | VOC               | Xylenes (Total)         | 1330-20-7  | mg/kg | 58                                   | n      | 250             | n       | Not Available                 | 0.047              |
| 6  | SVOC              | Benzo(a)anthracene      | 56-55-3    | mg/kg | 1.1                                  | c      | 21              | c       | <b>4.5</b>                    | 1                  |
| 6  | SVOC              | Benzo(a)pyrene          | 50-32-8    | mg/kg | 0.11                                 | c*     | 2.1             | c*      | <b>4.4</b>                    | 1                  |
| 6  | SVOC              | Benzo(b)fluoranthene    | 205-99-2   | mg/kg | 1.1                                  | c      | 21              | c       | <b>6.2</b>                    | 1.2                |
| 6  | SVOC              | Carbazole               | 86-74-8    | mg/kg | NA                                   |        | NA              |         | 1                             | 0.38               |
| 6  | SVOC              | Chrysene                | 218-01-9   | mg/kg | 110                                  | c      | 2100            | c       | 6.3                           | 1.2                |
| 6  | SVOC              | Indeno (1,2,3-cd)pyrene | 193-39-5   | mg/kg | 1.1                                  | c      | 21              | c       | <b>5.3</b>                    | 1.1                |
| 6  | Pesticide         | 4,4'-DDE                | 72-55-9    | mg/kg | 2                                    | c**    | 9.3             | c**     | 1.2                           | 0.72               |
| 6  | Pesticide         | 4,4'-DDT                | 50-29-3    | mg/kg | 1.9                                  | c**    | 8.5             | c**     | 1.8                           | 1.7                |
| 6  | Pesticide         | Dieldrin                | 60-57-1    | mg/kg | 0.034                                | c**    | 0.14            | c*      | <u>0.73</u>                   | <u>0.73</u>        |
| 6  | PCB               | PCB-1260 (Aroclor 1260) | 11096-82-5 | mg/kg | 0.24                                 | c      | 0.99            | c       | <b>6.3</b>                    | <u>6.3</u>         |
| 6  | Inorganic         | Arsenic                 | 7440-38-2  | mg/kg | 0.68                                 | c**R   | 3               | c*R     | <u>29</u>                     | <u>22</u>          |
| 6  | Inorganic         | Copper                  | 7440-50-8  | mg/kg | 310                                  | n      | 4700            | n       | Not Available                 | 28                 |

**Notes:**

Exposure point concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables and compared to the current USEPA Regional Screening Levels (RSL) to determine if there are any exceedances. Values are estimated due to unclear scanned version of data.

**USEPA RSLs at a target cancer risk of 1E-06 and target hazard quotient of 0.1 are applied to identify exceedances.** The RSLs listed for chromium are Cr (III) and Cr (VI), respectively; data were compared to the Cr(VI) RSLs. The RSLs listed for 1,2-Dichloroethene (DCE) are trans-1,2-DCE and cis-1,2-DCE, respectively; data were compared to the cis-1,2-DCE RSLs. The RSLs listed for TPH are for low aromatics; data were compared to low aromatic TPH RSL.

A majority of the Site, FU-1 to FU-5, is designated for industrial use by LUCs and the evaluation applies the Industrial Soil RSLs to identify exceedances. Limited areas of FU-6 are designated as residential and the evaluation applies both of the Industrial and Residential Soil RSLs to identify exceedances in FU-6.

Exceedances of the USEPA Residential Soil RSL are highlighted and bold.

Exceedances of the USEPA Industrial Soil RSLs are highlighted and underlined.

**Abbreviations:**

ft -- feet  
FU -- functional unit  
mg/kg -- milligrams per kilogram

**RSL Basis:**

\* -- Where noncancer RSL < 100 times cancer RSL  
\*\* -- Where noncancer RSL < 10 times cancer RSL  
c -- Cancer  
L -- See RSL User's Guide - RSL calculated using blood-lead modeling  
m -- RSL may exceed ceiling limit  
n -- Noncancer  
R -- See RSL User's Guide - RSL calculated using relative bioavailability factor  
s -- RSL may exceed Csat

**References:**

USEPA. 2018. Regional Screening Levels (RSLs) - Generic Tables. November. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

| FU             | Constituent Group | Parameter                    | CASRN      | EPC Soil (0-2 ft) (mg/kg) | EPC Soil (0-10 ft) (mg/kg) | Commercial/Industrial Receptor Scenario Evaluation |                                  |                |                  |                |                  | Residential Receptor Scenario Evaluation |                                   |                |                  |
|----------------|-------------------|------------------------------|------------|---------------------------|----------------------------|----------------------------------------------------|----------------------------------|----------------|------------------|----------------|------------------|------------------------------------------|-----------------------------------|----------------|------------------|
|                |                   |                              |            |                           |                            | USEPA RSLs (TR of 1E-06, THQ of 1)                 |                                  | EPC 0-2 ft     |                  | EPC 0-10 ft    |                  | USEPA RSLs (TR of 1E-06, THQ of 1)       |                                   | EPC 0-2 ft     |                  |
|                |                   |                              |            |                           |                            | Industrial Cancer RSL (mg/kg)                      | Industrial Noncancer RSL (mg/kg) | Screening Risk | Screening Hazard | Screening Risk | Screening Hazard | Residential Cancer RSL (mg/kg)           | Residential Noncancer RSL (mg/kg) | Screening Risk | Screening Hazard |
| 1              | SVOC              | Carbazole                    | 86-74-8    | 3.1E+00                   | 9.7E-01                    | Not Available                                      | Not Available                    | No Criterion   | No Criterion     | No Criterion   | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Benzo(a)anthracene           | 56-55-3    | 1.1E+01                   | 1.8E+01                    | 2.1E+01                                            | Not Available                    | 5.2E-07        | No Criterion     | 8.6E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Benzo(a)pyrene               | 50-32-8    | 1.3E+01                   | 1.9E+01                    | 2.1E+00                                            | 2.2E+02                          | 6.2E-06        | 5.9E-02          | 9.0E-06        | 8.6E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 1.3E+01                   | 2.0E+01                    | 2.1E+01                                            | Not Available                    | 6.2E-07        | No Criterion     | 9.5E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Benzo(k)fluoranthene         | 207-08-9   | 1.3E+01                   | 2.1E+01                    | 2.1E+02                                            | Not Available                    | 6.2E-08        | No Criterion     | 1.0E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Chrysene                     | 218-01-9   | 1.4E+01                   | 2.6E+01                    | 2.1E+03                                            | Not Available                    | 6.7E-09        | No Criterion     | 1.2E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | 3.0E+00                   | 2.1E+00                    | 2.1E+00                                            | Not Available                    | 1.4E-06        | No Criterion     | 1.0E-06        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | 9.0E+00                   | 1.2E+01                    | 2.1E+01                                            | Not Available                    | 4.3E-07        | No Criterion     | 5.7E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | PCB               | PCB-1260 (Aroclor 1260)      | 11096-82-5 | 3.2E+00                   | 6.3E+00                    | 9.9E-01                                            | Not Available                    | 3.2E-06        | No Criterion     | 6.4E-06        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | Pesticide         | 4,4'-DDE                     | 72-55-9    | 5.8E+00                   | 3.2E+00                    | 9.3E+00                                            | 3.5E+02                          | 6.2E-07        | 1.7E-02          | 3.4E-07        | 9.1E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | Pesticide         | 4,4'-DDT                     | 50-29-3    | 2.3E+00                   | 3.2E+00                    | 8.5E+00                                            | 5.2E+02                          | 2.7E-07        | 4.4E-03          | 3.8E-07        | 6.2E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | Pesticide         | Dieldrin                     | 60-57-1    | 8.1E-01                   | 4.0E+00                    | 1.4E-01                                            | 4.1E+01                          | 5.8E-06        | 2.0E-02          | 2.9E-05        | 9.8E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | TPH               | Total Petroleum Hydrocarbons | TPH        | 6.4E+01                   | 6.4E+01                    | Not Available                                      | 4.2E+02                          | No Criterion   | 1.5E-01          | No Criterion   | 1.5E-01          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | Inorganic         | Arsenic                      | 7440-38-2  | 2.6E+01                   | 1.5E+01                    | 3.0E+00                                            | 4.8E+02                          | 8.7E-06        | 5.4E-02          | 5.0E-06        | 3.1E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | Inorganic         | Mercury                      | 7439-97-6  | 1.2E-01                   | 7.6E-02                    | Not Available                                      | 4.6E+01                          | No Criterion   | 2.6E-03          | No Criterion   | 1.7E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 1              | Inorganic         | Antimony                     | 7440-36-0  | 4.6E+00                   | 2.4E+00                    | Not Available                                      | 4.7E+02                          | No Criterion   | 9.8E-03          | No Criterion   | 5.1E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Inorganic         | Arsenic                      | 7440-38-2  | 2.2E+01                   | Not Available              | 3.0E+00                                            | 4.8E+02                          | 7.3E-06        | 4.6E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Inorganic         | Nickel                       | 7440-02-0  | 2.1E+01                   | Not Available              | 6.4E+04                                            | 2.2E+04                          | 3.3E-10        | 9.5E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Pesticide         | DDE                          | 72-55-9    | 9.0E-02                   | Not Available              | 9.3E+00                                            | 3.5E+02                          | 9.7E-09        | 2.6E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Pesticide         | DDT                          | 50-29-3    | 7.0E-02                   | Not Available              | 8.5E+00                                            | 5.2E+02                          | 8.2E-09        | 1.3E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Pesticide         | Dieldrin                     | 60-57-1    | 1.0E+00                   | Not Available              | 1.4E-01                                            | 4.1E+01                          | 7.1E-06        | 2.4E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | SVOC              | Benzo(a)pyrene               | 50-32-8    | 8.0E-02                   | Not Available              | 2.1E+00                                            | 2.2E+02                          | 3.8E-08        | 3.6E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Inorganic         | Lead                         | 7439-92-1  | 4.9E+01                   | Not Available              | Not Available                                      | 8.0E+02                          | No Criterion   | 6.1E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Inorganic         | Manganese                    | 7439-96-5  | 9.7E+02                   | Not Available              | Not Available                                      | 2.6E+04                          | No Criterion   | 3.7E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Inorganic         | Copper                       | 7440-50-8  | 2.5E+01                   | Not Available              | Not Available                                      | 4.7E+04                          | No Criterion   | 5.3E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | Inorganic         | Chromium (Total)             | 7440-47-3  | 1.9E+01                   | Not Available              | Not Available                                      | 1,800,000 / 3,500                | No Criterion   | 5.4E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | SVOC              | Benzo(a)anthracene           | 56-55-3    | 8.0E-02                   | Not Available              | 2.1E+01                                            | Not Available                    | 3.8E-09        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Ballpark     | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 9.0E-02                   | Not Available              | 2.1E+01                                            | Not Available                    | 4.3E-09        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Pesticide         | Alpha-Chlordane              | 5103-71-9  | 3.5E-01                   | Not Available              | 7.7E+00                                            | 4.5E+02                          | 4.5E-08        | 7.8E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Pesticide         | Gamma-Chlordane              | 5566-34-7  | 4.0E-01                   | Not Available              | 7.7E+00                                            | 4.5E+02                          | 5.2E-08        | 8.9E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Inorganic         | Arsenic                      | 7440-38-2  | 4.3E+01                   | Not Available              | 3.0E+00                                            | 4.8E+02                          | 1.4E-05        | 9.0E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Inorganic         | Nickel                       | 7440-02-0  | 3.2E+01                   | Not Available              | 6.4E+04                                            | 2.2E+04                          | 5.0E-10        | 1.5E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Pesticide         | DDE                          | 72-55-9    | 1.0E+00                   | Not Available              | 9.3E+00                                            | 3.5E+02                          | 1.1E-07        | 2.9E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Pesticide         | DDT                          | 50-29-3    | 1.0E+00                   | Not Available              | 8.5E+00                                            | 5.2E+02                          | 1.2E-07        | 1.9E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Pesticide         | Dieldrin                     | 60-57-1    | 3.0E+00                   | Not Available              | 1.4E-01                                            | 4.1E+01                          | 2.1E-05        | 7.3E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | SVOC              | Benzo(a)pyrene               | 50-32-8    | 2.3E-01                   | Not Available              | 2.1E+00                                            | 2.2E+02                          | 1.1E-07        | 1.0E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Inorganic         | Lead                         | 7439-92-1  | 1.2E+02                   | Not Available              | Not Available                                      | 8.0E+02                          | No Criterion   | 1.5E-01          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Inorganic         | Manganese                    | 7439-96-5  | 1.9E+03                   | Not Available              | Not Available                                      | 2.6E+04                          | No Criterion   | 7.2E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Inorganic         | Copper                       | 7440-50-8  | 2.9E+01                   | Not Available              | Not Available                                      | 4.7E+04                          | No Criterion   | 6.2E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | Inorganic         | Chromium (Total)             | 7440-47-3  | 2.6E+01                   | Not Available              | Not Available                                      | 1,800,000 / 3,500                | No Criterion   | 7.4E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | SVOC              | Benzo(a)anthracene           | 56-55-3    | 2.3E-01                   | Not Available              | 2.1E+01                                            | Not Available                    | 1.1E-08        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Golf Course  | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 2.8E-01                   | Not Available              | 2.1E+01                                            | Not Available                    | 1.3E-08        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Inorganic         | Arsenic                      | 7440-38-2  | 1.9E+01                   | Not Available              | 3.0E+00                                            | 4.8E+02                          | 6.3E-06        | 4.0E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Inorganic         | Nickel                       | 7440-02-0  | 2.1E+01                   | Not Available              | 6.4E+04                                            | 2.2E+04                          | 3.3E-10        | 9.5E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Pesticide         | DDE                          | 72-55-9    | 4.3E-01                   | Not Available              | 9.3E+00                                            | 3.5E+02                          | 4.6E-08        | 1.2E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Pesticide         | DDT                          | 50-29-3    | 2.0E-01                   | Not Available              | 8.5E+00                                            | 5.2E+02                          | 2.4E-08        | 3.8E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Pesticide         | Dieldrin                     | 60-57-1    | 7.1E-01                   | Not Available              | 1.4E-01                                            | 4.1E+01                          | 5.1E-06        | 1.7E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | SVOC              | Benzo(a)pyrene               | 50-32-8    | 4.4E-01                   | Not Available              | 2.1E+00                                            | 2.2E+02                          | 2.1E-07        | 2.0E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Inorganic         | Lead                         | 7439-92-1  | 6.9E+01                   | Not Available              | Not Available                                      | 8.0E+02                          | No Criterion   | 8.6E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Inorganic         | Manganese                    | 7439-96-5  | 9.0E+02                   | Not Available              | Not Available                                      | 2.6E+04                          | No Criterion   | 3.5E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Inorganic         | Copper                       | 7440-50-8  | 5.5E+01                   | Not Available              | Not Available                                      | 4.7E+04                          | No Criterion   | 1.2E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | Inorganic         | Chromium (Total)             | 7440-47-3  | 1.6E+01                   | Not Available              | Not Available                                      | 1,800,000 / 3,500                | No Criterion   | 4.6E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | SVOC              | Benzo(a)anthracene           | 56-55-3    | 5.7E-01                   | Not Available              | 2.1E+01                                            | Not Available                    | 2.7E-08        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Playground   | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 4.6E-01                   | Not Available              | 2.1E+01                                            | Not Available                    | 2.2E-08        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Pesticide         | Alpha-Chlordane              | 5103-71-9  | 2.3E-01                   | Not Available              | 7.7E+00                                            | 4.5E+02                          | 3.0E-08        | 5.1E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Inorganic         | Arsenic                      | 7440-38-2  | 2.9E+01                   | Not Available              | 3.0E+00                                            | 4.8E+02                          | 9.7E-06        | 6.0E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Pesticide         | Gamma-Chlordane              | 5566-34-7  | 2.7E-01                   | Not Available              | 7.7E+00                                            | 4.5E+02                          | 3.5E-08        | 6.0E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Inorganic         | Nickel                       | 7440-02-0  | 2.6E+01                   | Not Available              | 6.4E+04                                            | 2.2E+04                          | 4.1E-10        | 1.2E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Pesticide         | DDE                          | 72-55-9    | 8.0E-01                   | Not Available              | 9.3E+00                                            | 3.5E+02                          | 8.6E-08        | 2.3E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Pesticide         | DDT                          | 50-29-3    | 9.6E-01                   | Not Available              | 8.5E+00                                            | 5.2E+02                          | 1.1E-07        | 1.8E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Pesticide         | Dieldrin                     | 60-57-1    | 2.0E+00                   | Not Available              | 1.4E-01                                            | 4.1E+01                          | 1.4E-05        | 4.9E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | SVOC              | Benzo(a)pyrene               | 50-32-8    | 2.6E-01                   | Not Available              | 2.1E+00                                            | 2.2E+02                          | 1.2E-07        | 1.2E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Inorganic         | Lead                         | 7439-92-1  | 7.6E+01                   | Not Available              | Not Available                                      | 8.0E+02                          | No Criterion   | 9.5E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Inorganic         | Manganese                    | 7439-96-5  | 9.8E+02                   | Not Available              | Not Available                                      | 2.6E+04                          | No Criterion   | 3.8E-02          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | Inorganic         | Copper                       | 7440-50-8  | 3.1E+01                   | Not Available              | Not Available                                      | 4.7E+04                          | No Criterion   | 6.6E-04          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | SVOC              | Benzo(a)anthracene           | 56-55-3    | 2.5E-01                   | Not Available              | 2.1E+01                                            | Not Available                    | 1.2E-08        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 2-Surface Soil | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 2.8E-01                   | Not Available              | 2.1E+01                                            | Not Available                    | 1.3E-08        | No Criterion     | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |

| FU             | Constituent Group | Parameter                    | CASRN      | EPC Soil (0-2 ft) (mg/kg) | EPC Soil (0-10 ft) (mg/kg) | Commercial/Industrial Receptor Scenario Evaluation |                                  |                |                  |                |                  | Residential Receptor Scenario Evaluation |                                   |                |                  |
|----------------|-------------------|------------------------------|------------|---------------------------|----------------------------|----------------------------------------------------|----------------------------------|----------------|------------------|----------------|------------------|------------------------------------------|-----------------------------------|----------------|------------------|
|                |                   |                              |            |                           |                            | USEPA RSLs (TR of 1E-06, THQ of 1)                 |                                  | EPC 0-2 ft     |                  | EPC 0-10 ft    |                  | USEPA RSLs (TR of 1E-06, THQ of 1)       |                                   | EPC 0-2 ft     |                  |
|                |                   |                              |            |                           |                            | Industrial Cancer RSL (mg/kg)                      | Industrial Noncancer RSL (mg/kg) | Screening Risk | Screening Hazard | Screening Risk | Screening Hazard | Residential Cancer RSL (mg/kg)           | Residential Noncancer RSL (mg/kg) | Screening Risk | Screening Hazard |
| 2-Surface Soil | Inorganic         | Chromium (Total)             | 7440-47-3  | 2.2E+01                   | Not Available              | Not Available                                      | 1,800,000 / 3,500                | No Criterion   | 6.3E-03          | No EPC         | No EPC           | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Benzo(a)anthracene           | 56-55-3    | 1.4E+00                   | 6.9E-01                    | 2.1E+01                                            | Not Available                    | 6.7E-08        | No Criterion     | 3.3E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 1.4E+00                   | 6.8E-01                    | 2.1E+01                                            | Not Available                    | 6.7E-08        | No Criterion     | 3.2E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Benzo(k)fluoranthene         | 207-08-9   | 1.4E+00                   | 6.9E-01                    | 2.1E+02                                            | Not Available                    | 6.7E-09        | No Criterion     | 3.3E-09        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Lead                         | 7439-92-1  | 3.1E+02                   | 1.4E+02                    | Not Available                                      | 8.0E+02                          | No Criterion   | 3.9E-01          | No Criterion   | 1.8E-01          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Chromium (Total)             | 7440-47-3  | 7.2E+01                   | 4.9E+01                    | Not Available                                      | 1,800,000 / 3,500                | No Criterion   | 2.1E-02          | No Criterion   | 1.4E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Carbazole                    | 86-74-8    | 5.5E-01                   | 3.4E-01                    | Not Available                                      | Not Available                    | No Criterion   | No Criterion     | No Criterion   | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Chrysene                     | 218-01-9   | 1.6E+00                   | 7.4E-01                    | 2.1E+03                                            | Not Available                    | 7.6E-10        | No Criterion     | 3.5E-10        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | 5.4E-01                   | 3.6E-01                    | 2.1E+00                                            | Not Available                    | 2.6E-07        | No Criterion     | 1.7E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | TPH               | Total Petroleum Hydrocarbons | TPH        | 2.7E+02                   | 2.7E+02                    | Not Available                                      | 4.2E+02                          | No Criterion   | 6.5E-01          | No Criterion   | 6.5E-01          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Mercury                      | 7439-97-6  | 6.2E-02                   | 5.6E-02                    | Not Available                                      | 4.6E+01                          | No Criterion   | 1.3E-03          | No Criterion   | 1.2E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Antimony                     | 7440-36-0  | 3.0E+00                   | 3.5E+00                    | Not Available                                      | 4.7E+02                          | No Criterion   | 6.4E-03          | No Criterion   | 7.4E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Copper                       | 7440-50-8  | Not Available             | 3.1E+01                    | Not Available                                      | 4.7E+04                          | No EPC         | No EPC           | No Criterion   | 6.6E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | 1.1E+00                   | 5.6E-01                    | 2.1E+01                                            | Not Available                    | 5.2E-08        | No Criterion     | 2.7E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Vanadium                     | 7440-62-2  | 2.6E+01                   | 2.7E+01                    | Not Available                                      | 5.8E+03                          | No Criterion   | 4.5E-03          | No Criterion   | 4.7E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Zinc                         | 7440-66-6  | 2.7E+02                   | 1.7E+02                    | Not Available                                      | 3.5E+05                          | No Criterion   | 7.8E-04          | No Criterion   | 4.9E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Selenium                     | 7782-49-2  | 8.2E-01                   | 7.2E-01                    | Not Available                                      | 5.8E+03                          | No Criterion   | 1.4E-04          | No Criterion   | 1.2E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Benzo(a)pyrene               | 50-32-8    | 1.3E+00                   | 6.5E-01                    | 2.1E+00                                            | 2.2E+02                          | 6.2E-07        | 5.9E-03          | 3.1E-07        | 3.0E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | SVOC              | Pentachlorophenol            | 87-86-5    | 2.4E-01                   | 1.6E-01                    | 4.0E+00                                            | 2.8E+03                          | 6.0E-08        | 8.6E-05          | 4.0E-08        | 5.7E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Pesticide         | Dieldrin                     | 60-57-1    | 3.7E-02                   | 1.7E-02                    | 1.4E-01                                            | 4.1E+01                          | 2.6E-07        | 9.0E-04          | 1.2E-07        | 4.1E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Arsenic                      | 7440-38-2  | 1.3E+01                   | 1.2E+01                    | 3.0E+00                                            | 4.8E+02                          | 4.3E-06        | 2.7E-02          | 4.0E-06        | 2.5E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Inorganic         | Cadmium                      | 7440-43-9  | 1.3E+00                   | 8.9E-01                    | 9.3E+03                                            | 9.8E+02                          | 1.4E-10        | 1.3E-03          | 9.6E-11        | 9.1E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 3              | Dioxin            | TCDD Equivalent              | NA         | 1.3E-05                   | 1.0E-05                    | 2.2E-05                                            | 7.2E-04                          | 5.9E-07        | 1.8E-02          | 4.5E-07        | 1.4E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Pesticide         | Chlordane, alpha             | 5103-71-9  | 7.4E-02                   | 1.1E-02                    | 7.7E+00                                            | 4.5E+02                          | 9.6E-09        | 1.6E-04          | 1.4E-09        | 2.4E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Pesticide         | Chlordane, gamma             | 5566-34-7  | 8.7E-02                   | 1.2E-02                    | 7.7E+00                                            | 4.5E+02                          | 1.1E-08        | 1.9E-04          | 1.6E-09        | 2.7E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Aluminum                     | 7429-90-5  | 1.3E+04                   | 1.2E+04                    | Not Available                                      | 1.1E+06                          | No Criterion   | 1.2E-02          | No Criterion   | 1.1E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Lead                         | 7439-92-1  | 1.6E+02                   | 6.5E+01                    | Not Available                                      | 8.0E+02                          | No Criterion   | 2.0E-01          | No Criterion   | 8.1E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Manganese                    | 7439-96-5  | 7.2E+02                   | 7.9E+02                    | Not Available                                      | 2.6E+04                          | No Criterion   | 2.8E-02          | No Criterion   | 3.0E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | VOC               | 1,2-Dichloroethylene, Total  | 540-59-0   | Not Available             | 6.6E-03                    | Not Available                                      | 2,300 / 23,000                   | No EPC         | No EPC           | No Criterion   | 2.9E-06          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Chromium (Total)             | 7440-47-3  | 6.7E+01                   | 3.8E+01                    | Not Available                                      | 1,800,000 / 3,500                | No Criterion   | 1.9E-02          | No Criterion   | 1.1E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Thallium                     | 7440-28-0  | 9.8E-01                   | 9.3E-01                    | Not Available                                      | 1.2E+01                          | No Criterion   | 8.2E-02          | No Criterion   | 7.8E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Antimony                     | 7440-36-0  | 4.3E+00                   | 3.5E+00                    | Not Available                                      | 4.7E+02                          | No Criterion   | 9.1E-03          | No Criterion   | 7.4E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Carbazole                    | 86-74-8    | 2.6E-01                   | 2.3E-01                    | Not Available                                      | Not Available                    | No Criterion   | No Criterion     | No Criterion   | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | TPH               | Total Petroleum Hydrocarbons | TPH        | 1.3E+03                   | 1.3E+03                    | Not Available                                      | 4.2E+02                          | No Criterion   | 3.1E+00          | No Criterion   | 3.1E+00          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Benzo(a)anthracene           | 56-55-3    | 5.4E-01                   | 3.2E-01                    | 2.1E+01                                            | Not Available                    | 2.6E-08        | No Criterion     | 1.5E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Copper                       | 7440-50-8  | 3.4E+01                   | 2.9E+01                    | Not Available                                      | 4.7E+04                          | No Criterion   | 7.2E-04          | No Criterion   | 6.2E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 5.4E-01                   | 3.2E-01                    | 2.1E+01                                            | Not Available                    | 2.6E-08        | No Criterion     | 1.5E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Chrysene                     | 218-01-9   | 5.8E-01                   | 3.3E-01                    | 2.1E+03                                            | Not Available                    | 2.8E-10        | No Criterion     | 1.6E-10        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | 3.7E-01                   | 2.7E-01                    | 2.1E+00                                            | Not Available                    | 1.8E-07        | No Criterion     | 1.3E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Zinc                         | 7440-66-6  | 2.2E+02                   | 1.4E+02                    | Not Available                                      | 3.5E+05                          | No Criterion   | 6.3E-04          | No Criterion   | 4.0E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Selenium                     | 7782-49-2  | 1.1E+00                   | 8.0E-01                    | Not Available                                      | 5.8E+03                          | No Criterion   | 1.9E-04          | No Criterion   | 1.4E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | 4.9E-01                   | 3.1E-01                    | 2.1E+01                                            | Not Available                    | 2.3E-08        | No Criterion     | 1.5E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | PCB               | PCB-1260 (Aroclor 1260)      | 11096-82-5 | 6.6E+00                   | 8.7E-01                    | 9.9E-01                                            | Not Available                    | 6.7E-06        | No Criterion     | 8.8E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | VOC               | 1,1,2,2-Tetrachloroethane    | 79-34-5    | 5.9E-03                   | 6.3E-03                    | 2.7E+00                                            | 2.3E+04                          | 2.2E-09        | 2.6E-07          | 2.3E-09        | 2.7E-07          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | VOC               | Trichloroethylene            | 79-01-6    | Not Available             | 6.4E-03                    | 6.0E+00                                            | 1.9E+01                          | No EPC         | No EPC           | 1.1E-09        | 3.4E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Benzo(a)pyrene               | 50-32-8    | 5.4E-01                   | 3.2E-01                    | 2.1E+00                                            | 2.2E+02                          | 2.6E-07        | 2.5E-03          | 1.5E-07        | 1.5E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | SVOC              | Pentachlorophenol            | 87-86-5    | 1.2E-01                   | 1.4E-01                    | 4.0E+00                                            | 2.8E+03                          | 3.0E-08        | 4.3E-05          | 3.5E-08        | 5.0E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Pesticide         | 4,4'-DDE                     | 72-55-9    | 1.5E-01                   | 2.1E-02                    | 9.3E+00                                            | 3.5E+02                          | 1.6E-08        | 4.3E-04          | 2.3E-09        | 6.0E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Pesticide         | 4,4'-DDT                     | 50-29-3    | 3.1E-01                   | 3.5E-02                    | 8.5E+00                                            | 5.2E+02                          | 3.6E-08        | 6.0E-04          | 4.1E-09        | 6.7E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Pesticide         | Dieldrin                     | 60-57-1    | 3.9E-01                   | 3.4E-02                    | 1.4E-01                                            | 4.1E+01                          | 2.8E-06        | 9.5E-03          | 2.4E-07        | 8.3E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Arsenic                      | 7440-38-2  | 1.7E+01                   | 1.6E+01                    | 3.0E+00                                            | 4.8E+02                          | 5.7E-06        | 3.5E-02          | 5.3E-06        | 3.3E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Inorganic         | Cobalt                       | 7440-48-4  | Not Available             | 1.0E+01                    | 1.9E+03                                            | 3.5E+02                          | No EPC         | No EPC           | 5.3E-09        | 2.9E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 4              | Dioxin            | TCDD Equivalent              | NA         | 4.7E-04                   | 9.6E-04                    | 2.2E-05                                            | 7.2E-04                          | 2.1E-05        | 6.5E-01          | 4.4E-05        | 1.3E+00          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | 4-Methylphenol (p-Cresol)    | 106-44-5   | 5.6E-02                   | 5.6E-02                    | Not Available                                      | 8.2E+04                          | No Criterion   | 6.8E-07          | No Criterion   | 6.8E-07          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | Inorganic         | Manganese                    | 7439-96-5  | Not Available             | 1.1E+03                    | Not Available                                      | 2.6E+04                          | No EPC         | No EPC           | No Criterion   | 4.4E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | Inorganic         | Antimony                     | 7440-36-0  | 6.3E+00                   | 4.3E+00                    | Not Available                                      | 4.7E+02                          | No Criterion   | 1.3E-02          | No Criterion   | 9.1E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | VOC               | 1,2-Dichloroethylene, Total  | 540-59-0   | Not Available             | 2.0E-03                    | Not Available                                      | 2,300 / 23,000                   | No EPC         | No EPC           | No Criterion   | 8.7E-07          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | Inorganic         | Chromium (Total)             | 7440-47-3  | Not Available             | 2.5E+01                    | Not Available                                      | 1,800,000 / 3,500                | No EPC         | No EPC           | No Criterion   | 7.1E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Carbazole                    | 86-74-8    | 1.1E+00                   | 4.6E-01                    | Not Available                                      | Not Available                    | No Criterion   | No Criterion     | No Criterion   | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Benzo(a)anthracene           | 56-55-3    | 9.0E+00                   | 2.1E+00                    | 2.1E+01                                            | Not Available                    | 4.3E-07        | No Criterion     | 1.0E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Benzo(b)fluoranthene         | 205-99-2   | 8.1E+00                   | 2.0E+00                    | 2.1E+01                                            | Not Available                    | 3.9E-07        | No Criterion     | 9.5E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Benzo(k)fluoranthene         | 207-08-9   | 7.8E+00                   | 1.9E+00                    | 2.1E+02                                            | Not Available                    | 3.7E-08        | No Criterion     | 9.0E-09        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Chrysene                     | 218-01-9   | Not Available             | 2.0E+00                    | 2.1E+03                                            | Not Available                    | 4.8E-09        | No Criterion     | 9.5E-10        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Dibenz(a,h)anthracene        | 53-70-3    | 1.3E+00                   | 6.1E-01                    | 2.1E+00                                            | Not Available                    | 6.2E-07        | No Criterion     | 2.9E-07        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | SVOC              | Indeno (1,2,3-cd)pyrene      | 193-39-5   | 6.5E+00                   | 1.6E+00                    | 2.1E+01                                            | Not Available                    | 3.1E-07        | No Criterion     | 7.6E-08        | No Criterion     | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | Inorganic         | Copper                       | 7440-50-8  | Not Available             | 2.6E+01                    | Not Available                                      | 4.7E+04                          | No EPC         | No EPC           | No Criterion   | 5.5E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5              | VOC               | Trichloroethylene            | 79-01-6    | Not Available             | 1.2E-02                    | 6.0E+00                                            | 1.9E+01                          | No EPC         | No EPC           | 2.0E-09        | 6.3E-04          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |

Table 1b  
Calculation of Screening Risks and Hazards using Soil Analytical Results compared to Human Health Screening Criteria for all FUs  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Parameter               | CASRN      |  | EPC Soil (0-2 ft) (mg/kg) | EPC Soil (0-10 ft) (mg/kg) | Commercial/Industrial Receptor Scenario Evaluation |                                  |                |                  |                |                  | Residential Receptor Scenario Evaluation |                                   |                |                  |
|----|-------------------|-------------------------|------------|--|---------------------------|----------------------------|----------------------------------------------------|----------------------------------|----------------|------------------|----------------|------------------|------------------------------------------|-----------------------------------|----------------|------------------|
|    |                   |                         |            |  |                           |                            | USEPA RSLs (TR of 1E-06, THQ of 1)                 |                                  | EPC 0-2 ft     |                  | EPC 0-10 ft    |                  | USEPA RSLs (TR of 1E-06, THQ of 1)       |                                   | EPC 0-2 ft     |                  |
|    |                   |                         |            |  |                           |                            | Industrial Cancer RSL (mg/kg)                      | Industrial Noncancer RSL (mg/kg) | Screening Risk | Screening Hazard | Screening Risk | Screening Hazard | Residential Cancer RSL (mg/kg)           | Residential Noncancer RSL (mg/kg) | Screening Risk | Screening Hazard |
| 5  | SVOC              | Benzo(a)pyrene          | 50-32-8    |  | 8.4E+00                   | 2.0E+00                    | 2.1E+00                                            | 2.2E+02                          | 4.0E-06        | 3.8E-02          | 9.5E-07        | 9.1E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5  | SVOC              | Pentachlorophenol       | 87-86-5    |  | 3.2E-01                   | 2.3E-01                    | 4.0E+00                                            | 2.8E+03                          | 8.0E-08        | 1.1E-04          | 5.8E-08        | 8.2E-05          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5  | Pesticide         | Dieldrin                | 60-57-1    |  | 1.1E+00                   | 1.1E+00                    | 1.4E-01                                            | 4.1E+01                          | 7.9E-06        | 2.7E-02          | 7.9E-06        | 2.7E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5  | Inorganic         | Arsenic                 | 7440-38-2  |  | 1.5E+01                   | 1.4E+01                    | 3.0E+00                                            | 4.8E+02                          | 5.0E-06        | 3.1E-02          | 4.7E-06        | 2.9E-02          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 5  | Inorganic         | Cadmium                 | 7440-43-9  |  | Not Available             | 2.6E+00                    | 9.3E+03                                            | 9.8E+02                          | No EPC         | No EPC           | 2.8E-10        | 2.7E-03          | Not Applicable                           | Not Applicable                    | Not Applicable | Not Applicable   |
| 6  | VOC               | Xylenes (Total)         | 1330-20-7  |  | Not Available             | 4.7E-02                    | Not Available                                      | 2.5E+03                          | No EPC         | No EPC           | No Criterion   | 1.9E-05          | Not Available                            | 5.8E+02                           | No EPC         | No EPC           |
| 6  | SVOC              | Carbazole               | 86-74-8    |  | 1.0E+00                   | 3.8E-01                    | Not Available                                      | Not Available                    | No Criterion   | No Criterion     | No Criterion   | No Criterion     | Not Available                            | Not Available                     | No Criterion   | No Criterion     |
| 6  | SVOC              | Benzo(a)anthracene      | 56-55-3    |  | 4.5E+00                   | 1.0E+00                    | 2.1E+01                                            | Not Available                    | 2.1E-07        | No Criterion     | 4.8E-08        | No Criterion     | 1.1E+00                                  | Not Available                     | 4.1E-06        | No Criterion     |
| 6  | SVOC              | Benzo(b)fluoranthene    | 205-99-2   |  | 6.2E+00                   | 1.2E+00                    | 2.1E+01                                            | Not Available                    | 3.0E-07        | No Criterion     | 5.7E-08        | No Criterion     | 1.1E+00                                  | Not Available                     | 5.6E-06        | No Criterion     |
| 6  | SVOC              | Chrysene                | 218-01-9   |  | 6.3E+00                   | 1.2E+00                    | 2.1E+03                                            | Not Available                    | 3.0E-09        | No Criterion     | 5.7E-10        | No Criterion     | 1.1E+02                                  | Not Available                     | 5.7E-08        | No Criterion     |
| 6  | SVOC              | Indeno (1,2,3-cd)pyrene | 193-39-5   |  | 5.3E+00                   | 1.1E+00                    | 2.1E+01                                            | Not Available                    | 2.5E-07        | No Criterion     | 5.2E-08        | No Criterion     | 1.1E+00                                  | Not Available                     | 4.8E-06        | No Criterion     |
| 6  | PCB               | PCB-1260 (Aroclor 1260) | 11096-82-5 |  | 6.3E+00                   | 6.3E+00                    | 9.9E-01                                            | Not Available                    | 6.4E-06        | No Criterion     | 6.4E-06        | No Criterion     | 2.4E-01                                  | Not Available                     | 2.6E-05        | No Criterion     |
| 6  | Inorganic         | Copper                  | 7440-50-8  |  | Not Available             | 2.8E+01                    | Not Available                                      | 4.7E+04                          | No EPC         | No EPC           | No Criterion   | 6.0E-04          | Not Available                            | 3.1E+03                           | No EPC         | No EPC           |
| 6  | VOC               | Benzene                 | 71-43-2    |  | Not Available             | 6.8E-02                    | 5.1E+00                                            | 4.2E+02                          | No EPC         | No EPC           | 1.3E-08        | 1.6E-04          | 1.2E+00                                  | 8.2E+01                           | No EPC         | No EPC           |
| 6  | VOC               | Methylene chloride      | 75-09-2    |  | Not Available             | 9.0E-03                    | 1.0E+03                                            | 3.2E+03                          | No EPC         | No EPC           | 9.0E-12        | 2.8E-06          | 5.7E+01                                  | 3.5E+02                           | No EPC         | No EPC           |
| 6  | SVOC              | Benzo(a)pyrene          | 50-32-8    |  | 4.4E+00                   | 1.0E+00                    | 2.1E+00                                            | 2.2E+02                          | 2.1E-06        | 2.0E-02          | 4.8E-07        | 4.5E-03          | 1.1E-01                                  | 1.8E+01                           | 4.0E-05        | 2.4E-01          |
| 6  | Pesticide         | 4,4'-DDE                | 72-55-9    |  | 1.2E+00                   | 7.2E-01                    | 9.3E+00                                            | 3.5E+02                          | 1.3E-07        | 3.4E-03          | 7.7E-08        | 2.1E-03          | 2.0E+00                                  | 2.3E+01                           | 6.0E-07        | 5.2E-02          |
| 6  | Pesticide         | 4,4'-DDT                | 50-29-3    |  | 1.8E+00                   | 1.7E+00                    | 8.5E+00                                            | 5.2E+02                          | 2.1E-07        | 3.5E-03          | 2.0E-07        | 3.3E-03          | 1.9E+00                                  | 3.7E+01                           | 9.5E-07        | 4.9E-02          |
| 6  | Pesticide         | Dieldrin                | 60-57-1    |  | 7.3E-01                   | 7.3E-01                    | 1.4E-01                                            | 4.1E+01                          | 5.2E-06        | 1.8E-02          | 5.2E-06        | 1.8E-02          | 3.4E-02                                  | 3.2E+00                           | 2.1E-05        | 2.3E-01          |
| 6  | Inorganic         | Arsenic                 | 7440-38-2  |  | 2.9E+01                   | 2.2E+01                    | 3.0E+00                                            | 4.8E+02                          | 9.7E-06        | 6.0E-02          | 7.3E-06        | 4.6E-02          | 6.8E-01                                  | 3.5E+01                           | 4.3E-05        | 8.3E-01          |

**Notes:**  
Exposure point concentrations (EPCs) were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables and compared to the current USEPA Regional Screening Levels (RSL). Values are estimated due to unclear scanned version of data.

**USEPA RSLs at a target cancer risk of 1E-06 and target hazard quotient of 1 are applied to calculate screening risks and hazards.** The RSLs listed for chromium are Cr (III) and Cr (VI), respectively; data were compared to the Cr(VI) RSLs. The RSLs listed for 1,2-Dichloroethene (DCE) are trans-1,2-DCE and cis-1,2-DCE, respectively; data were compared to the cis-1,2-DCE RSLs. The RSLs listed for TPH are for low aromatics; data were compared to low aromatic TPH RSL.

A majority of the Site is designated for industrial use by LUCs and the evaluation applies the Industrial Soil RSLs to calculate screening risks and hazards. Limited areas of FU-6 are designated as residential and the evaluation applies the Residential Soil RSLs to calculate screening risks and hazards in FU-6.

The risk and hazard equations are as follows:

$$Risk = \frac{EPC}{RSL_{Cancer}} \times Target Risk$$

and

$$Hazard = \frac{EPC}{RSL_{Noncancer}} \times Target Hazard Quotient$$

where target risk is 1E-06 and target hazard quotient is 1.

**Abbreviations:**  
ft -- feet  
FU -- functional unit  
mg/kg -- milligrams per kilogram

**References:**  
USEPA. 2018. Regional Screening Levels (RSLs) - Generic Tables. November. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

Table 1c: Cumulative Risk and Hazard Index for Soil for all FUs.

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee



| FU             | Commercial/Industrial Receptor Scenario Evaluation |              |                 |              | Residential Receptor Scenario Evaluation |              | Constituent Groups Evaluated                        |
|----------------|----------------------------------------------------|--------------|-----------------|--------------|------------------------------------------|--------------|-----------------------------------------------------|
|                | 0-2 ft                                             |              | 0-10 ft         |              | 0-2 ft                                   |              |                                                     |
|                | Cumulative Risk                                    | Hazard Index | Cumulative Risk | Hazard Index | Cumulative Risk                          | Hazard Index |                                                     |
| 1              | 2.8E-05                                            | 0.32         | 5.3E-05         | 0.39         | NA                                       | NA           | Inorganic, PCB, Pesticide, SVOC, TPH                |
| 2-Ballpark     | 1.5E-05                                            | 0.18         | NA              | NA           | NA                                       | NA           | Inorganic, Pesticide, SVOC                          |
| 2-Golf Course  | 3.6E-05                                            | 0.41         | NA              | NA           | NA                                       | NA           | Inorganic, Pesticide, SVOC                          |
| 2-Playground   | 1.2E-05                                            | 0.19         | NA              | NA           | NA                                       | NA           | Inorganic, Pesticide, SVOC                          |
| 2-Surface Soil | 2.4E-05                                            | 0.26         | NA              | NA           | NA                                       | NA           | Inorganic, Pesticide, SVOC                          |
| 3              | 6.3E-06                                            | 1.1          | 5.2E-06         | 0.90         | NA                                       | NA           | Dioxin, Inorganic, Pesticide, SVOC, TPH             |
| 4              | 3.7E-05                                            | 4.2          | 5.0E-05         | 4.7          | NA                                       | NA           | Dioxin, Inorganic, PCB, Pesticide, SVOC, TPH, VOC   |
| 5              | 1.9E-05                                            | 0.11         | 1.4E-05         | 0.13         | NA                                       | NA           | Inorganic, Pesticide, SVOC, VOC                     |
| 6              | 2.4E-05                                            | 0.11         | 2.0E-05         | 0.074        | 1.5E-04                                  | 1.4          | Inorganic, PCB, Pesticide, SVOC, VOC (0-10 ft only) |

**Note:**

Values greater than the acceptable limits of 1E-04 for cumulative cancer risk and one for noncancer hazards are shaded and bolded.

**Abbreviations:**

ft -- feet

FU -- functional unit

NA -- not available

PCB -- polychlorinated biphenyl

SVOC -- semivolatile organic compound

TPH -- total petroleum hydrocarbon

VOC -- volatile organic compound

Table 2

Removal Action Building 949 in FU-4 –

Comparison of Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

|                                   |           | Chromium<br>(mg/kg) | Lead<br>(mg/kg) |
|-----------------------------------|-----------|---------------------|-----------------|
| USEPA RSL Industrial Soil (mg/kg) |           | 180,000 nm / 6.3 c* | 800 L           |
| Sample Number                     | Date      |                     |                 |
| 949B-1                            | 9/24/2001 | 140                 | 290             |
| 949B-2                            | 9/24/2001 | 547                 | 732             |
| 949B-3                            | 9/24/2001 | 306                 | 349             |
| 949B-5                            | 9/24/2001 | 512                 | 256             |
| 949B-6                            | 9/24/2001 | 76                  | 100             |
| 949B-7                            | 9/24/2001 | 112                 | 168             |
| 949B-8                            | 9/24/2001 | 109                 | 105             |
| 949C-1                            | 9/25/2001 | 47.3                | 132             |
| 949B-10                           | 9/24/2001 | 198                 | 159             |

**Notes:**

The final confirmation samples results, post-excavation, are presented. Detected concentrations (units of mg/kg) were taken from the 2002 DDMT Remediation Report Removal Action at Building 949, Table B-2 for FU-4 and compared to the current USEPA Regional Screening Levels (RSL) to determine if there are any exceedances.

USEPA RSLs at a target cancer risk of 1E-06 and target hazard quotient of 0.1 are applied. The RSLs listed for chromium are Cr (III) and Cr (VI). Data were compared to the Cr(VI) RSLs.

There are no exceedances of the USEPA Industrial Soil RSLs for lead and Cr (III). All chromium results exceed the Cr (VI) Industrial Soil RSL.

**References:**

USEPA. 2018. Regional Screening Levels (RSLs) - Generic Tables. November. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

**RSL Basis:**

\* -- Where noncancer RSL < 100 times cancer RSL

c -- Cancer

L -- See RSL User's Guide - RSL calculated using blood-lead modeling

m -- RSL may exceed ceiling limit

n -- Noncancer

Table 3  
Removal Action Parcels 35 28 in FU-3 – Comparison of Area B Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| Constituent Group | Parameter               | CASRN     | Units | Original USEPA Region 9 Industrial Screening Clearance Criteria | USEPA RSL Industrial Soil |         | East of 1084 |          |          |          | East of 1087 |          |          |           |           | West of 1088 |          |
|-------------------|-------------------------|-----------|-------|-----------------------------------------------------------------|---------------------------|---------|--------------|----------|----------|----------|--------------|----------|----------|-----------|-----------|--------------|----------|
|                   |                         |           |       |                                                                 | Value                     | Basis   | 1084E-B      | 1084E-WS | 1084E-WN | 1084E-WW | 1087E-BN     | 1087E-BM | 1087E-WN | 1087E-BSB | 1087E-BSC | 1088W-B      | 1088W-WW |
| SVOC              | Acenaphthene            | 83-32-9   | ug/kg | 120,000,000                                                     | 4,500,000                 | n       | ND           | ND       | ND       | ND       | ND           | ND       | ND       | ND        | ND        | ND           | ND       |
| SVOC              | Acenaphthylene          | 208-96-8  | ug/kg | NA                                                              | NA                        |         | ND           | ND       | ND       | ND       | ND           | ND       | ND       | ND        | ND        | ND           | ND       |
| SVOC              | Anthracene              | 120-12-7  | ug/kg | 610,000,000                                                     | 23,000,000                | n       | ND           | ND       | ND       | ND       | 380          | ND       | 250 p    | 330 p     | 280 p     | ND           | ND       |
| SVOC              | Benzo(a)anthracene      | 56-55-3   | ug/kg | 7,800                                                           | 21,000                    | c       | 22           | 110      | 180      | 52       | 1600 D       | 91       | 1600 D   | 1700 D    | 1400 D    | 27           | 34       |
| SVOC              | Benzo(a)pyrene          | 50-32-8   | ug/kg | 88                                                              | 2,100                     | c*      | 17 J         | 130      | 190      | 49       | 1500 D       | 92       | 1700 D   | 2000 D    | 1600 D    | 31           | 39       |
| SVOC              | Benzo(b)fluoranthene    | 205-99-2  | ug/kg | 7,800                                                           | 21,000                    | c       | 26           | 160      | 240      | 65       | 1600 D       | 110      | 2000 D   | 2200 D    | 1800 D    | 50           | 61       |
| SVOC              | Benzo(g,h,i)perylene    | 191-24-2  | ug/kg | NA                                                              | NA                        |         | 18 J,P       | 110      | 140      | 41       | 950 D        | 70       | 1500 D   | 1600 D    | 1400 D    | 41 p         | 39       |
| SVOC              | Benzo(k)fluoranthene    | 207-08-9  | ug/kg | 78,000                                                          | 210,000                   | c       | 13 J         | 74       | 110      | 35       | 700 D        | 52       | 830 D    | 860 D     | 710 D     | 22           | 28       |
| SVOC              | Chrysene                | 218-01-9  | ug/kg | 780,000                                                         | 2,100,000                 | c       | 12 J,P       | 100      | 160      | 34 p     | 1200 D       | 68       | 1300 D   | 1400 D    | 1100 D    | 27 p         | 28 p     |
| SVOC              | Dibenz(a,h)anthracene   | 53-70-3   | ug/kg | 780                                                             | 2,100                     | c       | ND           | ND       | ND       | ND       | ND           | ND       | ND       | ND        | ND        | ND           | ND       |
| SVOC              | Fluoranthene            | 206-44-0  | ug/kg | 82,000,000                                                      | 3,000,000                 | n       | 90 p         | 270      | 6600 P,D | 110 p    | 3700 D       | 220      | 3300 D   | 4000 D    | 3300 D    | 44           | 61       |
| SVOC              | Fluorene                | 86-73-7   | ug/kg | 82,000,000                                                      | 3,000,000                 | n       | ND           | ND       | ND       | ND       | 290          | ND       | 220      | 410       | 370       | ND           | ND       |
| SVOC              | Indeno (1,2,3-cd)pyrene | 193-39-5  | ug/kg | 7,800                                                           | 21,000                    | c       | ND           | 61       | 85 p     | ND       | 570 D        | 17 J     | 740 D    | 840 D     | 700 D     | 23           | 25       |
| SVOC              | Naphthalene             | 91-20-3   | ug/kg | 41,000,000                                                      | 17,000                    | c**     | ND           | ND       | ND       | ND       | ND           | ND       | ND       | 91 J      | 150 J     | ND           | ND       |
| SVOC              | Phenanthrene            | 85-01-8   | ug/kg | NA                                                              | NA                        |         | 65 J,P       | 110 J    | 190 J    | 70 J     | 2200         | 150 J    | 1600     | 3100      | 2700      | ND           | ND       |
| SVOC              | Pyrene                  | 129-00-0  | ug/kg | 61,000,000                                                      | 2,300,000                 | n       | 8.3 J,P      | 170 p    | 280 p    | 64       | 2300 D       | 120      | 1800 D   | 3500 D    | 2500 D    | 36           | 43       |
|                   |                         |           |       |                                                                 |                           |         |              |          |          |          |              |          |          |           |           |              |          |
| Inorganic         | Antimony                | 7440-36-0 | mg/kg | 7                                                               | 47                        | n       | 2            | 1.7      | 1.7      | 2        | 2            | 1.6      | 2.5      | 1.8       | 1.7       | 1.4          | 1.5      |
| Inorganic         | Arsenic                 | 7440-38-2 | mg/kg | 20                                                              | 3                         | c*R     | 9            | 12       | 12       | 11       | 13           | 7.9      | 10       | 11        | 11        | 12           | 8.8      |
| Inorganic         | Beryllium               | 7440-41-7 | mg/kg | 1.1                                                             | 230                       | n       | 0.92         | 0.66     | 0.68     | 0.88     | 0.77         | 0.62     | 0.66     | 0.81      | 0.81      | 0.66         | 0.53     |
| Inorganic         | Cadmium                 | 7440-43-9 | mg/kg | 2,000                                                           | 98                        | n       | 0.23         | 1.1      | 0.67     | 0.53     | 0.51         | 0.53     | 0.89     | 0.63      | 0.46      | 0.27         | 0.39     |
| Inorganic         | Chromium (Total)        | 7440-47-3 | mg/kg | 6,100                                                           | 180,000 / 6.3             | nm / c* | 28           | 74       | 40       | 27       | 83           | 64       | 160      | 53        | 48        | 33           | 48       |
| Inorganic         | Copper                  | 7440-50-8 | mg/kg | 82,000                                                          | 4,700                     | n       | 50           | 49       | 39       | 32       | 27           | 35       | 31       | 19        | 19        | 30           | 48       |
| Inorganic         | Lead                    | 7439-92-1 | mg/kg | 1,000                                                           | 800                       | L       | 92           | 260      | 130      | 78       | 390          | 250      | 670      | 140       | 140       | 65           | 110      |
| Inorganic         | Mercury                 | 7439-97-6 | mg/kg | 610                                                             | 4.6                       | ns      | ND           | ND       | ND       | ND       | ND           | ND       | ND       | ND        | ND        | ND           | ND       |
| Inorganic         | Nickel                  | 7440-02-0 | mg/kg | 41,000                                                          | 2,200                     | n       | 21           | 12       | 14       | 19       | 15           | 14       | 18       | 18        | 19        | 20           | 22       |
| Inorganic         | Selenium                | 7782-49-2 | mg/kg | 10,000                                                          | 580                       | n       | ND           | ND,L     | ND,L     | ND,L     | ND,L         | ND,L     | ND,S     | ND,L      | ND,L      | ND,L         | ND,L     |
| Inorganic         | Silver                  | 7440-22-4 | mg/kg | 10,000                                                          | 580                       | n       | ND           | 0.67     | 0.65     | ND       | ND           | ND       | ND       | ND        | ND        | 3.1          | 2.9      |
| Inorganic         | Thallium                | 7440-28-0 | mg/kg | 140                                                             | 1.2                       | n       | ND, S        | ND,S     | ND,S     | ND,S     | ND,S         | ND,S     | ND,S     | ND,S      | ND,S      | ND           | ND       |
| Inorganic         | Zinc                    | 7440-66-6 | mg/kg | 23,000                                                          | 35,000                    | n       | 74           | 260      | 150      | 95       | 220          | 210      | 400      | 170       | 170       | 93           | 110      |



Table 3

Removal Action Parcels 35 28 in FU-3 – Comparison of Area B Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee



| Constituent Group | Parameter               | CASRN     | Units | Original USEPA Region 9 Industrial Screening Clearance Criteria | USEPA RSL Industrial Soil |         | West of 1089 |       | South of 1089 |          |          |          |          |          | North of 1091 |          |          |          |          |          |          |
|-------------------|-------------------------|-----------|-------|-----------------------------------------------------------------|---------------------------|---------|--------------|-------|---------------|----------|----------|----------|----------|----------|---------------|----------|----------|----------|----------|----------|----------|
|                   |                         |           |       |                                                                 | Value                     | Basis   |              |       | 1089W-B       | 1089W-WW | 1089S-BN | 1089S-BS | 1089S-WW | 1089S-WS | 1089S-WE      | 1091N-BB | 1091N-BC | 1091N-NW | 1091N-SW | 1091N-EW | 1091N-WW |
| SVOC              | Acenaphthene            | 83-32-9   | ug/kg | 120,000,000                                                     | 4,500,000                 | n       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Acenaphthylene          | 208-96-8  | ug/kg | NA                                                              | NA                        |         | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Anthracene              | 120-12-7  | ug/kg | 610,000,000                                                     | 23,000,000                | n       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Benzo(a)anthracene      | 56-55-3   | ug/kg | 7,800                                                           | 21,000                    | c       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | 9 J      | 23            | 8.9 J    | 12 J     | 13 J     | 6.8 J    |          |          |
| SVOC              | Benzo(a)pyrene          | 50-32-8   | ug/kg | 88                                                              | 2,100                     | c*      | ND           | ND    | ND            | ND       | ND       | ND       | ND       | 11 J     | 24            | 9.7 J    | 12 J     | ND       | 10 J,P   |          |          |
| SVOC              | Benzo(b)fluoranthene    | 205-99-2  | ug/kg | 7,800                                                           | 21,000                    | c       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | 14 J     | 27            | 14 J     | 18       | 21       | 15 J     |          |          |
| SVOC              | Benzo(g,h,i)perylene    | 191-24-2  | ug/kg | NA                                                              | NA                        |         | ND           | ND    | ND            | ND       | ND       | ND       | ND       | 14 J,P   | 20            | 25 J     | 15 J,P   | 17 J,P   | ND       |          |          |
| SVOC              | Benzo(k)fluoranthene    | 207-08-9  | ug/kg | 78,000                                                          | 210,000                   | c       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | 6.1 J,P  | 13 J          | 5.5 J,P  | 8.8 J,P  | 9.9 J,P  | ND       |          |          |
| SVOC              | Chrysene                | 218-01-9  | ug/kg | 780,000                                                         | 2,100,000                 | c       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | 7.8 J    | 17 J          | 7.1 J,P  | ND       | 9.2 J,P  | ND       |          |          |
| SVOC              | Dibenz(a,h)anthracene   | 53-70-3   | ug/kg | 780                                                             | 2,100                     | c       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Fluoranthene            | 206-44-0  | ug/kg | 82,000,000                                                      | 3,000,000                 | n       | ND           | 21    | ND            | ND       | ND       | 38       | 27       | 32 p     | 55 P          | 44 p     | 61 p     | 53 p     | ND       |          |          |
| SVOC              | Fluorene                | 86-73-7   | ug/kg | 82,000,000                                                      | 3,000,000                 | n       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Indeno (1,2,3-cd)pyrene | 193-39-5  | ug/kg | 7,800                                                           | 21,000                    | c       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Naphthalene             | 91-20-3   | ug/kg | 41,000,000                                                      | 17,000                    | c**     | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Phenanthrene            | 85-01-8   | ug/kg | NA                                                              | NA                        |         | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| SVOC              | Pyrene                  | 129-00-0  | ug/kg | 61,000,000                                                      | 2,300,000                 | n       | ND           | ND    | ND            | ND       | ND       | 24       | ND       | ND       | 23            | ND       | ND       | 16 J,P   | ND       |          |          |
|                   |                         |           |       |                                                                 |                           |         |              |       |               |          |          |          |          |          |               |          |          |          |          |          |          |
| Inorganic         | Antimony                | 7440-36-0 | mg/kg | 7                                                               | 47                        | n       | ND           | ND    | ND            | ND       | ND       | 1.2      | ND       | ND       | 1.2           | 1.1      | 1.2      | 1.2      | 1.2      | ND       |          |
| Inorganic         | Arsenic                 | 7440-38-2 | mg/kg | 20                                                              | 3                         | c*R     | 7.3          | 10    | 9.5           | 8.3      | 9.3      | 11       | 8.8      | 8.9      | 9.2           | 11       | 10       | 9.1      | 10       | 9.1      | 9.3      |
| Inorganic         | Beryllium               | 7440-41-7 | mg/kg | 1.1                                                             | 230                       | n       | 0.72         | 0.62  | 0.72          | 0.63     | 0.62     | 0.58     | 0.65     | 0.74     | 0.69          | 0.84     | 0.88     | 0.69     | 0.66     |          |          |
| Inorganic         | Cadmium                 | 7440-43-9 | mg/kg | 2,000                                                           | 98                        | n       | 0.39         | 0.39  | 0.23          | 0.2      | 0.23     | 0.23     | 0.22     | 0.3      | 0.3           | 0.45     | 0.5      | 0.49     | 0.28     |          |          |
| Inorganic         | Chromium (Total)        | 7440-47-3 | mg/kg | 6,100                                                           | 180,000 / 6.3             | nm / c* | 37           | 45    | 26            | 17       | 19       | 23       | 22       | 25       | 22            | 29       | 38       | 29       | 38       | 29       | 22       |
| Inorganic         | Copper                  | 7440-50-8 | mg/kg | 82,000                                                          | 4,700                     | n       | 15           | 17    | 18            | 15       | 19       | 15       | 15       | 29       | 20            | 21       | 27       | 23       | 23       | 16       |          |
| Inorganic         | Lead                    | 7439-92-1 | mg/kg | 1,000                                                           | 800                       | L       | 120          | 120   | 30            | 10       | 16       | 44       | 63       | 160      | 170           | 210      | 440      | 390      | 20       |          |          |
| Inorganic         | Mercury                 | 7439-97-6 | mg/kg | 610                                                             | 4.6                       | ns      | ND           | ND    | ND            | ND       | ND       | ND       | ND       | ND       | ND            | ND       | ND       | ND       | ND       | ND       | ND       |
| Inorganic         | Nickel                  | 7440-02-0 | mg/kg | 41,000                                                          | 2,200                     | n       | 17           | 18    | 20            | 18       | 21       | 17       | 18       | 21       | 18            | 18       | 23       | 18       | 20       |          |          |
| Inorganic         | Selenium                | 7782-49-2 | mg/kg | 10,000                                                          | 580                       | n       | ND, L        | ND, L | ND, L         | ND, L    | ND, L    | ND, L    | ND, L    | NA       | NA            | NA       | NA       | NA       | NA       | NA       | NA       |
| Inorganic         | Silver                  | 7440-22-4 | mg/kg | 10,000                                                          | 580                       | n       | 3            | 2.4   | 3.5           | 4        | 3.5      | 3.1      | 3.5      | 2.4      | 2             | 2.1      | 2.1      | 2.1      | 1.7      | 1.8      |          |
| Inorganic         | Thallium                | 7440-28-0 | mg/kg | 140                                                             | 1.2                       | n       | ND           | ND    | ND            | ND       | ND       | ND       | ND       | NA       | NA            | NA       | NA       | NA       | NA       | NA       | NA       |
| Inorganic         | Zinc                    | 7440-66-6 | mg/kg | 23,000                                                          | 35,000                    | n       | 210          | 260   | 72            | 45       | 57       | 60       | 69       | 59       | 56            | 69       | 87       | 71       | 52       |          |          |



| Constituent Group | Parameter               | CASRN     | Units | Original USEPA Region 9 Industrial Screening Clearance Criteria | USEPA RSL Industrial Soil |         | West of 1087 |          |           |           |          |          | Overexcavation Area Results |            |           |            |
|-------------------|-------------------------|-----------|-------|-----------------------------------------------------------------|---------------------------|---------|--------------|----------|-----------|-----------|----------|----------|-----------------------------|------------|-----------|------------|
|                   |                         |           |       |                                                                 | Value                     | Basis   | 1087W-BN     | 1087W-BS | 1087W-WWB | 1087W-WWA | 1087W-WN | 1087W-WS | 1087W-BN2                   | 1087W-BN2C | 1087W-WN2 | 1087W-WN2C |
| SVOC              | Acenaphthene            | 83-32-9   | ug/kg | 120,000,000                                                     | 4,500,000                 | n       | ND           | ND       | ND        | ND        | ND       | ND       | ND                          | ND         | ND        | ND         |
| SVOC              | Acenaphthylene          | 208-96-8  | ug/kg | NA                                                              | NA                        |         | ND           | ND       | ND        | ND        | ND       | ND       | ND                          | ND         | ND        | ND         |
| SVOC              | Anthracene              | 120-12-7  | ug/kg | 610,000,000                                                     | 23,000,000                | n       | ND           | ND       | ND        | ND        | ND       | ND       | 150 J                       | 640        | ND        | ND         |
| SVOC              | Benzo(a)anthracene      | 56-55-3   | ug/kg | 7,800                                                           | 21,000                    | c       | 47           | 22       | 23        | 110       | 310      | 27       | 990 D                       | 1600 D     | 190       | 220        |
| SVOC              | Benzo(a)pyrene          | 50-32-8   | ug/kg | 88                                                              | 2,100                     | c*      | 52           | 17       | 28        | 100       | 360      | 27       | 900 D                       | 1300 D     | 200       | 230        |
| SVOC              | Benzo(b)fluoranthene    | 205-99-2  | ug/kg | 7,800                                                           | 21,000                    | c       | 59           | 33       | 35        | 120       | 420 D    | 34       | 1200 D                      | 1500 D     | 260       | 310        |
| SVOC              | Benzo(g,h,i)perylene    | 191-24-2  | ug/kg | NA                                                              | NA                        |         | 48 p         | 30 p     | 31 p      | 99        | 380 D    | 32       | 860 D                       | 1000 D     | 190       | 240        |
| SVOC              | Benzo(k)fluoranthene    | 207-08-9  | ug/kg | 78,000                                                          | 210,000                   | c       | 28           | ND       | ND        | 57        | 190      | ND       | 500 D                       | 740 D      | 120       | 130        |
| SVOC              | Chrysene                | 218-01-9  | ug/kg | 780,000                                                         | 2,100,000                 | c       | 36           | ND       | 19 p      | 85        | 280      | 21 p     | 810 D                       | 1100 D     | 170       | 200        |
| SVOC              | Dibenz(a,h)anthracene   | 53-70-3   | ug/kg | 780                                                             | 2,100                     | c       | ND           | ND       | ND        | ND        | 36 p     | ND       | 95 p                        | 160        | 25 P      | 27         |
| SVOC              | Fluoranthene            | 206-44-0  | ug/kg | 82,000,000                                                      | 3,000,000                 | n       | 95           | 31 p     | 36 p      | 200       | 870 D    | 42       | 2700 D                      | 3700 D     | 540 D     | 580 D      |
| SVOC              | Fluorene                | 86-73-7   | ug/kg | 82,000,000                                                      | 3,000,000                 | n       | ND           | ND       | ND        | ND        | ND       | ND       | 140 J                       | 420        | 72 J      | ND         |
| SVOC              | Indeno (1,2,3-cd)pyrene | 193-39-5  | ug/kg | 7,800                                                           | 21,000                    | c       | 23           | ND       | ND        | 58        | 200      | ND       | 490 D                       | 590 D      | 100       | 140        |
| SVOC              | Naphthalene             | 91-20-3   | ug/kg | 41,000,000                                                      | 17,000                    | c**     | ND           | ND       | ND        | ND        | ND       | ND       | ND                          | ND         | ND        | ND         |
| SVOC              | Phenanthrene            | 85-01-8   | ug/kg | NA                                                              | NA                        |         | ND           | ND       | ND        | 200 p     | 700      | ND       | 1500                        | 3100       | 350       | 250        |
| SVOC              | Pyrene                  | 129-00-0  | ug/kg | 61,000,000                                                      | 2,300,000                 | n       | 54           | 19       | 24        | 170       | 390 D,P  | 25 p     | 1800 D                      | 2500 D     | 300       | 350        |
|                   |                         |           |       |                                                                 |                           |         |              |          |           |           |          |          |                             |            |           |            |
| Inorganic         | Antimony                | 7440-36-0 | mg/kg | 7                                                               | 47                        | n       | 1.2          | 1.2      | 1.5       | 1.2       | 2.5      | ND       | 3.4                         | 3.3        | 2.3       | 2.7        |
| Inorganic         | Arsenic                 | 7440-38-2 | mg/kg | 20                                                              | 3                         | c*R     | 8.1          | 8.9      | 6.8       | 6.9       | 29       | 7.1      | 6.5                         | 7.7        | 4.8       | 3.5        |
| Inorganic         | Beryllium               | 7440-41-7 | mg/kg | 1.1                                                             | 230                       | n       | 0.48         | 0.591    | 0.51      | 0.58      | 0.6      | 0.42     | 0.61                        | 0.56       | 0.29      | 0.29       |
| Inorganic         | Cadmium                 | 7440-43-9 | mg/kg | 2,000                                                           | 98                        | n       | 0.69         | 0.403    | 0.36      | 0.41      | 1.9      | 0.21     | 0.37                        | 0.51       | 0.44      | 0.56       |
| Inorganic         | Chromium (Total)        | 7440-47-3 | mg/kg | 6,100                                                           | 180,000 / 6.3             | nm / c* | 51           | 35.2     | 34        | 36        | 400      | 27       | 150                         | 150        | 86        | 250        |
| Inorganic         | Copper                  | 7440-50-8 | mg/kg | 82,000                                                          | 4,700                     | n       | 45           | 18       | 17        | 18        | 120      | 11       | 37                          | 87         | 69        | 34         |
| Inorganic         | Lead                    | 7439-92-1 | mg/kg | 1,000                                                           | 800                       | L       | 210          | 140      | 140       | 160       | 2200     | 86       | 390                         | 610        | 420       | 240        |
| Inorganic         | Mercury                 | 7439-97-6 | mg/kg | 610                                                             | 4.6                       | ns      | ND           | ND       | ND        | ND        | ND       | ND       | ND                          | ND         | ND        | ND         |
| Inorganic         | Nickel                  | 7440-02-0 | mg/kg | 41,000                                                          | 2,200                     | n       | 17           | 16       | 11        | 11        | 27       | 10       | 19                          | 28         | 15        | 11         |
| Inorganic         | Selenium                | 7782-49-2 | mg/kg | 10,000                                                          | 580                       | n       | ND,L         | ND,S     | ND,L      | ND,L      | ND,L     | ND,L     | ND                          | ND         | ND        | ND         |
| Inorganic         | Silver                  | 7440-22-4 | mg/kg | 10,000                                                          | 580                       | n       | 2.4          | 2.48     | 2.3       | 2.1       | 1.7      | 1.7      | ND                          | 0.63       | ND        | ND         |
| Inorganic         | Thallium                | 7440-28-0 | mg/kg | 140                                                             | 1.2                       | n       | ND           | ND       | ND        | ND        | ND       | ND       | ND                          | 0.68       | 0.63      | ND         |
| Inorganic         | Zinc                    | 7440-66-6 | mg/kg | 23,000                                                          | 35,000                    | n       | 130          | 140      | 84        | 96        | 1100     | 92       | 410                         | 380        | 220       | 740        |

Table 3

Removal Action Parcels 35 28 in FU-3 – Comparison of Area B Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee

**Notes:**

Detected concentrations (units of mg/kg) were taken from shallow soil confirmation sample results from the 2000 DDMT Remediation Report Removal Action in Parcels 35 and 28, Table B-2 for FU-3 and compared to the current USEPA Regional Screening Levels (RSL) to determine if there are any exceedances. Values are estimated due to unclear scanned version of data.

**USEPA RSLs at a target cancer risk of 1E-06 and target hazard quotient of 0.1 are applied.** The RSLs listed for chromium are Cr (III) and Cr (VI), respectively. Data were compared to the Cr(VI) RSLs.

Exceedances of the USEPA Industrial Soil RSLs are highlighted and underlined.

**Abbreviations:**

D -- Diluted concentration

J -- Estimated concentration

NA -- Not available

ND -- Nondetected concentration

**References:**

USEPA. 2018. Regional Screening Levels (RSLs) - Generic Tables. November. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

**RSL Basis:**

\* -- Where noncancer RSL < 100 times cancer RSL

\*\* -- Where noncancer RSL < 10 times cancer RSL

c -- Cancer

L -- See RSL User's Guide - RSL calculated using blood-lead modeling

m -- RSL may exceed ceiling limit

n -- Noncancer

R -- See RSL User's Guide - RSL calculated using relative bioavailability factor

s -- RSL may exceed Csat

Table 4  
Removal Action Parcels 35 28 in FU-3 – Comparison of Trench Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| Constituent Group | Parameter           | CASRN     | Units | Original USEPA Region 9 Industrial Screening Clearance Criteria | USEPA RSL Industrial Soil |         | 1084 Sump        |                  |                 |                 |                     |              | 1085 UST EXCAVATION              |                                  |                   |                   |                              |                           |                              |                              |                              |                      |                      |  |
|-------------------|---------------------|-----------|-------|-----------------------------------------------------------------|---------------------------|---------|------------------|------------------|-----------------|-----------------|---------------------|--------------|----------------------------------|----------------------------------|-------------------|-------------------|------------------------------|---------------------------|------------------------------|------------------------------|------------------------------|----------------------|----------------------|--|
|                   |                     |           |       |                                                                 | Value                     | Basis   | 1084N North Wall | 1084S South Wall | 1084E East Wall | 1084W West Wall | 10841 Dup. of 1084W | 1084B Bottom | 1025H-N hydraulic lift north end | 1025H-S hydraulic lift south end | 1025E-N north end | 1025E-S south end | 1025W-EN north 1/2 east wall | 1025W-ENC dup of 1025W-EN | 1025W-WN north 1/2 west wall | 1025W-ES south 1/2 east wall | 1025W-WS south 1/2 west wall | 1025B-N bottom north | 1025B-S bottom south |  |
| VOC               | 1,2-Dichloroethene* | 540-59-0  | mg/kg | NA                                                              | 2,300 / 230               | ns / n  | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | ND                | 0.0011 J          | ND                           | ND                        | ND                           | 0.0045 J                     | ND                           | ND                   | 0.0085               |  |
| VOC               | Acetone             | 67-64-1   | mg/kg | 200,000                                                         | 67,000                    | n       | 0.013            | 0.0099 J         | 0.0089 J        | 0.012 J         | .0088 J             | ND           | 0.0079 J                         | ND                               | 0.0085 J          | 0.0079 J          | 0.007 J                      | 0.0069 J                  | 0.0069 J                     | 0.007 J                      | 0.0077 J                     | 0.0068 J             | 0.0099 J             |  |
| VOC               | Tetrachloroethene   | 127-18-4  | mg/kg | 110                                                             | 39                        | n       | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | ND                | 0.00085 J         | ND                           | ND                        | ND                           | 0.0014 J                     | ND                           | 0.00046 J            | ND                   |  |
| VOC               | Trichloroethene     | 79-01-6   | mg/kg | 520                                                             | 1.9                       | n       | ND               | ND               | ND              | ND              | ND                  | ND           | 0.0033 J                         | ND                               | 0.0011 J          | ND                | ND                           | ND                        | ND                           | 0.0019 J                     | ND                           | 0.0014 J             | ND                   |  |
| Pesticide         | 4,4-DDT             | 50-29-3   | mg/kg | 17                                                              | 8.5                       | c**     | 0.00034          | 0.00024          | ND              | 0.00034 J       | 0.00034 J           | ND           | 0.00035 J                        | ND                               | 0.001 J           | ND                | 0.0067 J                     | 0.0011 J                  | ND                           | ND                           | ND                           | ND                   | ND                   |  |
| Pesticide         | 4,4-DDE             | 72-55-9   | mg/kg | 17                                                              | 9                         | c**     | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | 0.00045 J         | ND                | 0.00039 J                    | 0.00075 J                 | ND                           | ND                           | ND                           | ND                   | ND                   |  |
| Inorganic         | Aluminum            | 7429-90-5 | mg/kg | 24,000                                                          | 110,000                   | nm      | 14,000           | 17,100           | 17,000          | 16,000          | 15,000              | 17,000       | 16,000                           | 16,000                           | 17,000            | 17,000            | 17,000                       | 18,000                    | 18,000                       | 16,000                       | 17,000                       | 16,000               | 24,000               |  |
| Inorganic         | Antimony            | 7440-36-0 | mg/kg | 7                                                               | 47                        | n       | ND               | ND               | ND              | 1.70            | ND                  | ND           | 1.30                             | ND                               | 1.70              | ND                | 1.30                         | 1.70                      | ND                           | ND                           | 1.40                         | 1.40                 | 1.65                 |  |
| Inorganic         | Arsenic             | 7440-38-2 | mg/kg | 20                                                              | 3                         | c*R     | 5.40             | 7.60             | 4.90            | 4.70            | 4.50                | 5.00         | 6.40                             | 3.90                             | 6.70              | 9.40              | 6.70                         | 7.60                      | 6.50                         | 6.80                         | 5.80                         | 7.00                 | 7.80                 |  |
| Inorganic         | Barium              | 7440-39-3 | mg/kg | 140,000                                                         | 22,000                    | n       | 110              | 103              | 100             | 100             | 92                  | 110          | 99                               | 96                               | 98                | 85                | 120                          | 110                       | 100                          | 94                           | 91                           | 94                   | 96                   |  |
| Inorganic         | Beryllium           | 7440-41-7 | mg/kg | 1.1                                                             | 230                       | n       | 0.76             | 0.82             | 0.81            | 0.81            | 0.74                | 0.79         | 0.78                             | 0.77                             | 0.81              | 0.73              | 0.80                         | 0.84                      | 0.84                         | 0.76                         | 0.84                         | 0.90                 | 1.35                 |  |
| Inorganic         | Cadmium             | 7440-43-9 | mg/kg | 2,000                                                           | 98                        | n       | 0.30             | 0.24             | 0.23            | 0.24            | 0.24                | 0.22         | 0.22                             | 0.21                             | 0.30              | ND                | 0.20                         | 0.20                      | 0.20                         | 0.19                         | ND                           | 0.13                 | 0.23                 |  |
| Inorganic         | Calcium             | 7440-70-2 | mg/kg | NA                                                              | NA                        |         | 3,400            | 3,040            | 3,000           | 3,000           | 2,800               | 2,800        | 2,600                            | 2,800                            | 2,500             | 2,000             | 2,500                        | 2,600                     | 2,500                        | 2,300                        | 2,100                        | 1,900                | 2,400                |  |
| Inorganic         | Chromium            | 7440-47-3 | mg/kg | 6,100                                                           | 180,000 / 6.3             | nm / c* | 19               | 21               | 20              | 20              | 19                  | 21           | 21                               | 19                               | 21                | 21                | 21                           | 23                        | 21                           | 18                           | 35                           | 29                   | 44.2                 |  |
| Inorganic         | Cobalt              | 7440-48-4 | mg/kg | 120,000                                                         | 35                        | n       | 8.9              | 9.7              | 9.3             | 8.9             | 8.1                 | 9.3          | 8.7                              | 9.2                              | 9.2               | 7.3               | 8.8                          | 9.1                       | 9.4                          | 8.7                          | 6.9                          | 13                   | 16                   |  |
| Inorganic         | Copper              | 7440-50-8 | mg/kg | 82,000                                                          | 4,700                     | n       | 16               | 12.8             | 12              | 14              | 12                  | 13           | 13                               | 13                               | 14                | 10                | 13                           | 13                        | 12                           | 11                           | 8                            | 10                   | 14                   |  |
| Inorganic         | Cyanide             | 57-12-5   | mg/kg | NA                                                              | 15                        | n       | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | ND                | ND                | ND                           | ND                        | ND                           | ND                           | ND                           | ND                   | ND                   |  |
| Inorganic         | Iron                | 7439-89-6 | mg/kg | 37,000                                                          | 82,000                    | n       | 19,000           | 18,100           | 17,000          | 17,000          | 16,000              | 18,000       | 19,000                           | 19,000                           | 19,000            | 18,000            | 19,000                       | 20,000                    | 20,000                       | 19,000                       | 24,000                       | 23,000               | 39,000               |  |
| Inorganic         | Lead                | 7439-92-1 | mg/kg | 1,000                                                           | 800                       | L       | 10               | 8.4              | 8.2             | 7.8             | 8.1                 | 14           | 9.3                              | 5.8                              | 15                | 8.9               | 19                           | 11                        | 8.5                          | 7.9                          | 8.3                          | 12                   | 8.4                  |  |
| Inorganic         | Magnesium           | 7439-95-4 | mg/kg | NA                                                              | NA                        |         | 3,000            | 2,880            | 2,900           | 2,900           | 2,700               | 2,600        | 2,700                            | 2,700                            | 2,800             | 2,100             | 2,800                        | 2,900                     | 2,800                        | 2,600                        | 2,000                        | 1,600                | 1,400                |  |
| Inorganic         | Manganese           | 7439-96-5 | mg/kg | 1,300                                                           | 2,600                     |         | 580              | 593              | 610             | 540             | 490                 | 520          | 500                              | 480                              | 540               | 380               | 530                          | 490                       | 530                          | 510                          | 350                          | 820                  | 1,100                |  |
| Inorganic         | Mercury             | 7439-97-6 | mg/kg | 610                                                             | 4.6                       | ns      | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | ND                | ND                | ND                           | ND                        | ND                           | ND                           | ND                           | ND                   | ND                   |  |
| Inorganic         | Nickel              | 7440-02-0 | mg/kg | 41,000                                                          | 2,200                     | n       | 20               | 19               | 18              | 19              | 17                  | 17           | 18                               | 19                               | 18                | 14                | 19                           | 19                        | 18                           | 18                           | 14                           | 13                   | 17                   |  |
| Inorganic         | Potassium           | 7440-09-7 | mg/kg | NA                                                              | NA                        |         | 1,300            | 1,430            | 1,300           | 1,400           | 1,300               | 1,100        | 870                              | 1,000                            | 910               | 770               | 980                          | 1,000                     | 1,000                        | 900                          | 730                          | 650                  | 870                  |  |
| Inorganic         | Selenium            | 7782-49-2 | mg/kg | 10,000                                                          | 580                       | n       | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | ND                | ND                | ND                           | ND                        | ND                           | ND                           | ND                           | ND                   | ND                   |  |
| Inorganic         | Silver              | 7440-22-4 | mg/kg | 10,000                                                          | 580                       | n       | 2.5              | 3.1              | 3.2             | 3.1             | 2.6                 | 2.5          | 2.4                              | 2.4                              | 2.6               | 2.00              | 2.8                          | 3                         | 2.6                          | 2.2                          | 1.5                          | 1.6                  | 0.875                |  |
| Inorganic         | Sodium              | 7440-23-5 | mg/kg | NA                                                              | NA                        |         | 100              | 107              | 110             | 88              | 77                  | 68           | 110                              | 77                               | 130               | 84                | 130                          | 140                       | 110                          | 120                          | 210                          | 60                   | 100                  |  |
| Inorganic         | Thallium            | 7440-28-0 | mg/kg | 140                                                             | 1.2                       | n       | ND               | ND               | ND              | ND              | ND                  | ND           | ND                               | ND                               | ND                | ND                | ND                           | ND                        | ND                           | ND                           | ND                           | ND                   | ND                   |  |
| Inorganic         | Vanadium            | 7440-62-2 | mg/kg | 14,000                                                          | 580                       | n       | 39               | 43.1             | 43              | 42              | 39                  | 40           | 39                               | 38                               | 41                | 39                | 41                           | 43                        | 43                           | 38                           | 42                           | 42                   | 54                   |  |
| Inorganic         | Zinc                | 7440-66-6 | mg/kg | 23,000                                                          | 35,000                    | n       | 47               | 43.3             | 42              | 43              | 40                  | 45           | 41                               | 45                               | 63                | 31                | 43                           | 44                        | 41                           | 39                           | 31                           | 29                   | 31                   |  |

Table 4

Removal Action Parcels 35 28 in FU-3 – Comparison of Trench Soil Confirmation Sampling Analytical Results to Human Health Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee

**Notes:**

Detected concentrations (units of mg/kg) were taken from trench soil confirmation sample results from the 2000 DDMT Remediation Report Removal Action in Parcels 35 and 28, Table B-4 for FU-3 and compared to the current USEPA Regional Screening Levels (RSL) to determine if there are any exceedances. Values are estimated due to unclear scanned version of data.

USEPA RSLs at a target cancer risk of 1E-06 and target hazard quotient of 0.1 are applied. The RSLs listed for chromium are Cr (III) and Cr (VI), respectively; data were compared to the Cr(VI) RSLs. The RSLs listed for 1,2-Dichloroethene (DCE) are trans-1,2-DCE and cis-1,2-DCE, respectively; data were compared to the cis-1,2-DCE RSLs. Exceedances of the USEPA Industrial Soil RSLs are highlighted and underlined.

**Abbreviations:**

J -- Estimated concentration  
ND -- Nondetected concentration

**References:**

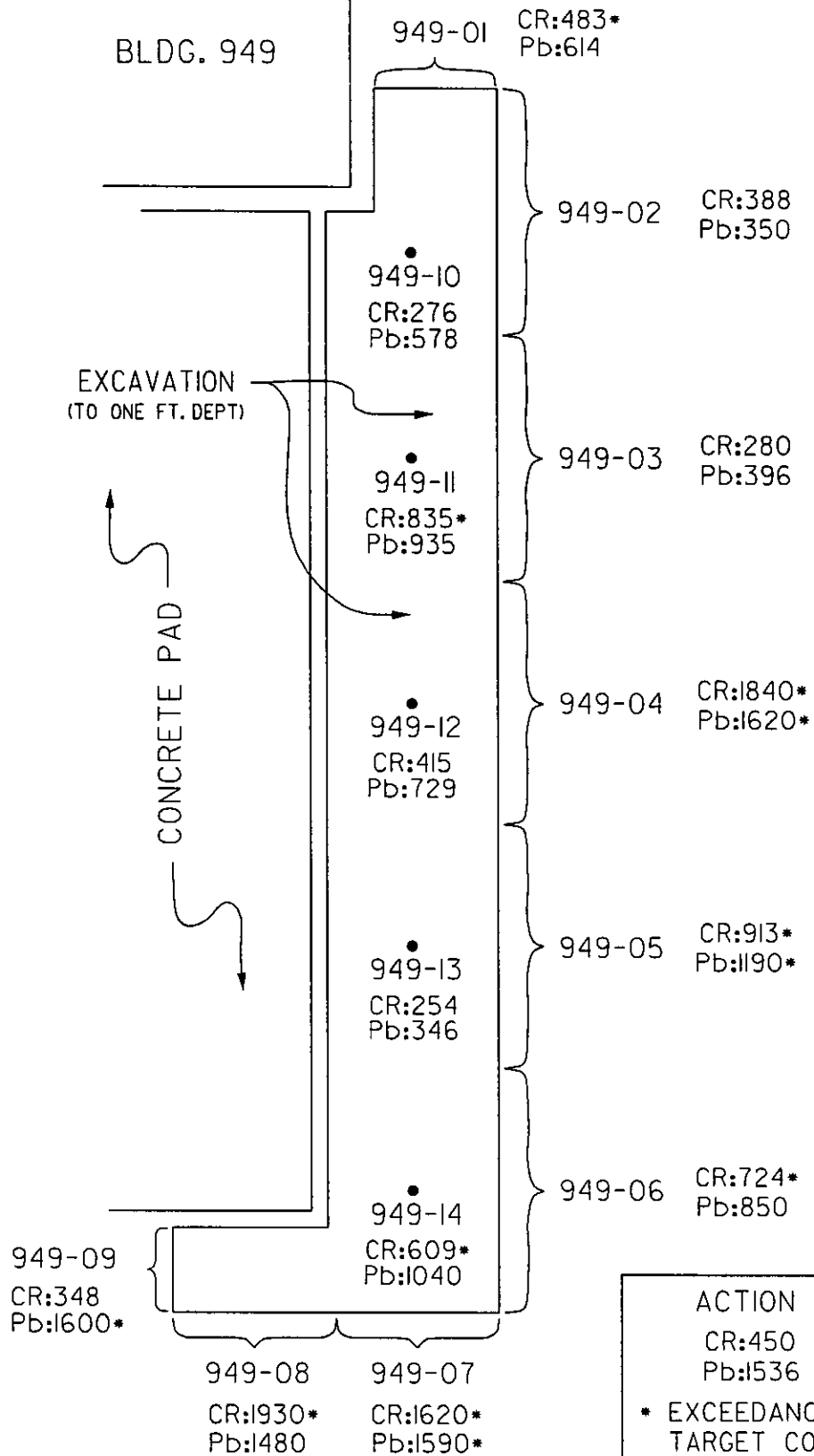
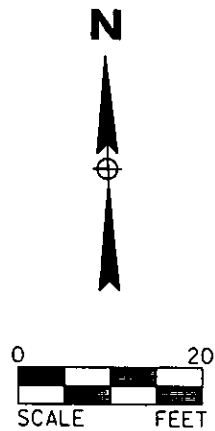
USEPA. 2018. Regional Screening Levels (RSLs) - Generic Tables. November. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>

**RSL Basis:**

\* -- Where noncancer RSL < 100 times cancer RSL  
\*\* -- Where noncancer RSL < 10 times cancer RSL  
c -- Cancer  
L -- See RSL User's Guide - RSL calculated using blood-lead modeling  
m -- RSL may exceed ceiling limit  
n -- Noncancer  
R -- See RSL User's Guide - RSL calculated using relative bioavailability factor  
s -- RSL may exceed Csat

## **2002 Removal Action Report - Building 949 in FU4 - Excerpt**

|                   |                                              |
|-------------------|----------------------------------------------|
| <b>Figure A-1</b> | <b>Original Excavation Area</b>              |
| <b>Figure A-2</b> | <b>First Over Excavation Area</b>            |
| <b>Figure A-3</b> | <b>Second and Final Over-Excavation Area</b> |
| <b>Table B-2</b>  | <b>Confirmation Sampling Results</b>         |

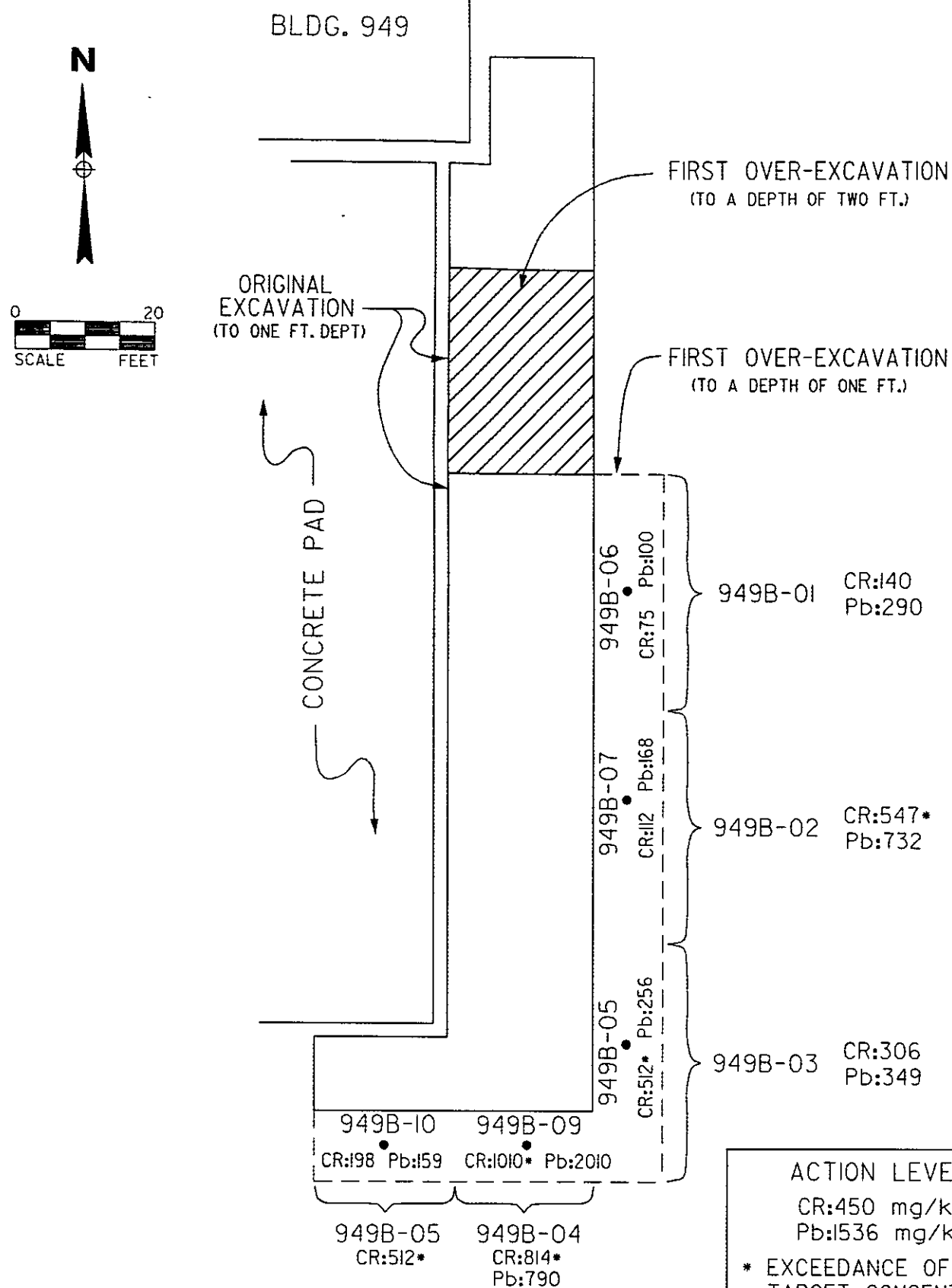


**JE JACOBS**

Sverdrup Civil, Inc.  
3354 Perimeter Hill Drive, Suite 310  
Nashville, Tennessee 37211-4192

ORIGINAL EXCAVATION AREA

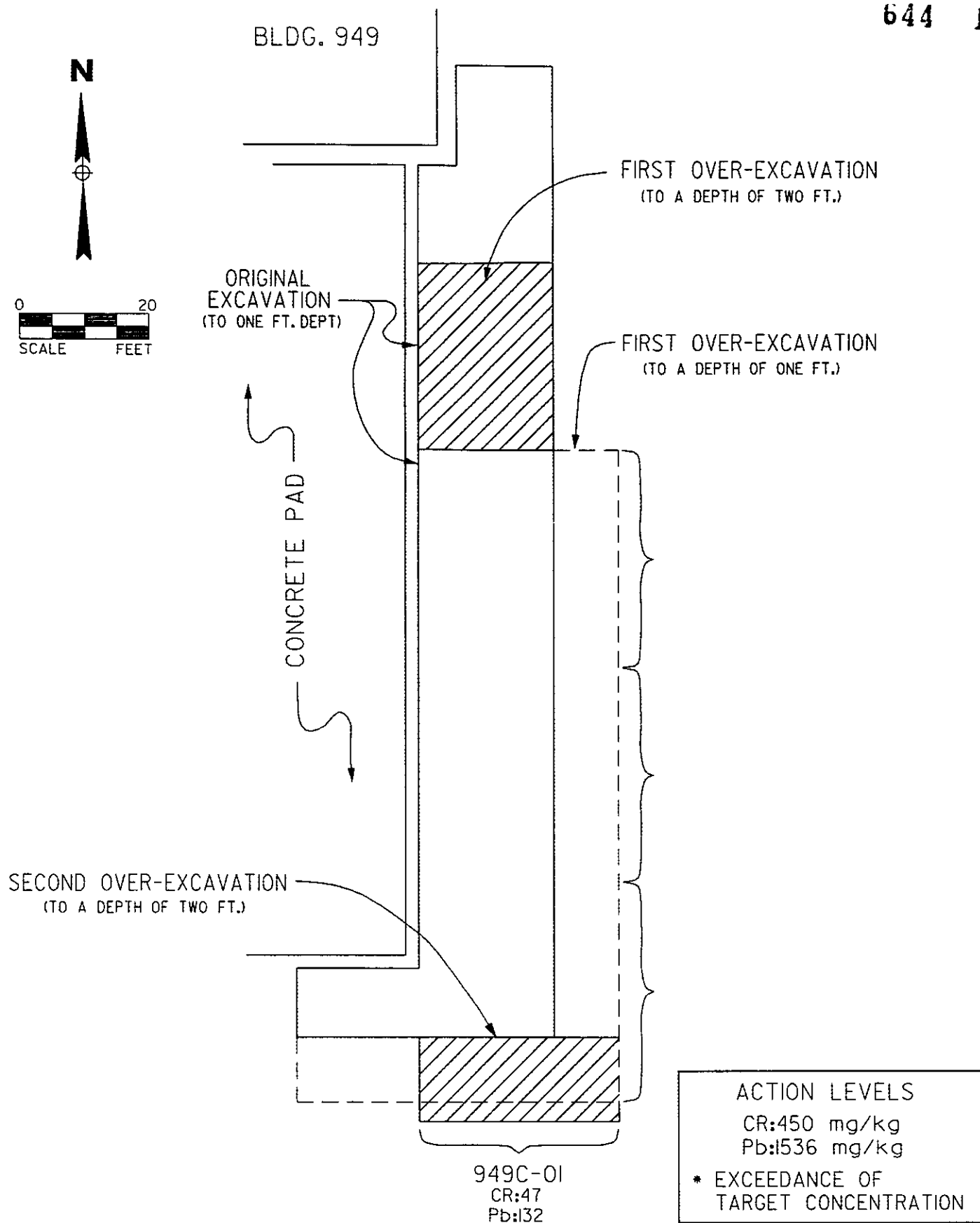
FIGURE #A-1

**JE JACOBS**

Sverdrup Civil, Inc.  
3354 Perimeter Hill Drive, Suite 310  
Nashville, Tennessee 37211-4152

First Over Excavation Area

FIGURE #A-2

**JE JACOBS**

Sverdrup Civil, Inc.  
3354 Perimeter Hill Drive Suite 30  
Nashville, Tennessee, 37214-692

SECOND AND FINAL  
OVER-EXCAVATION AREA

FIGURE #A-3



Table B-2

## Confirmation Sampling Results

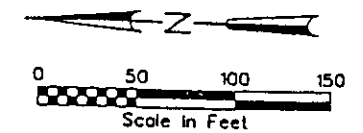
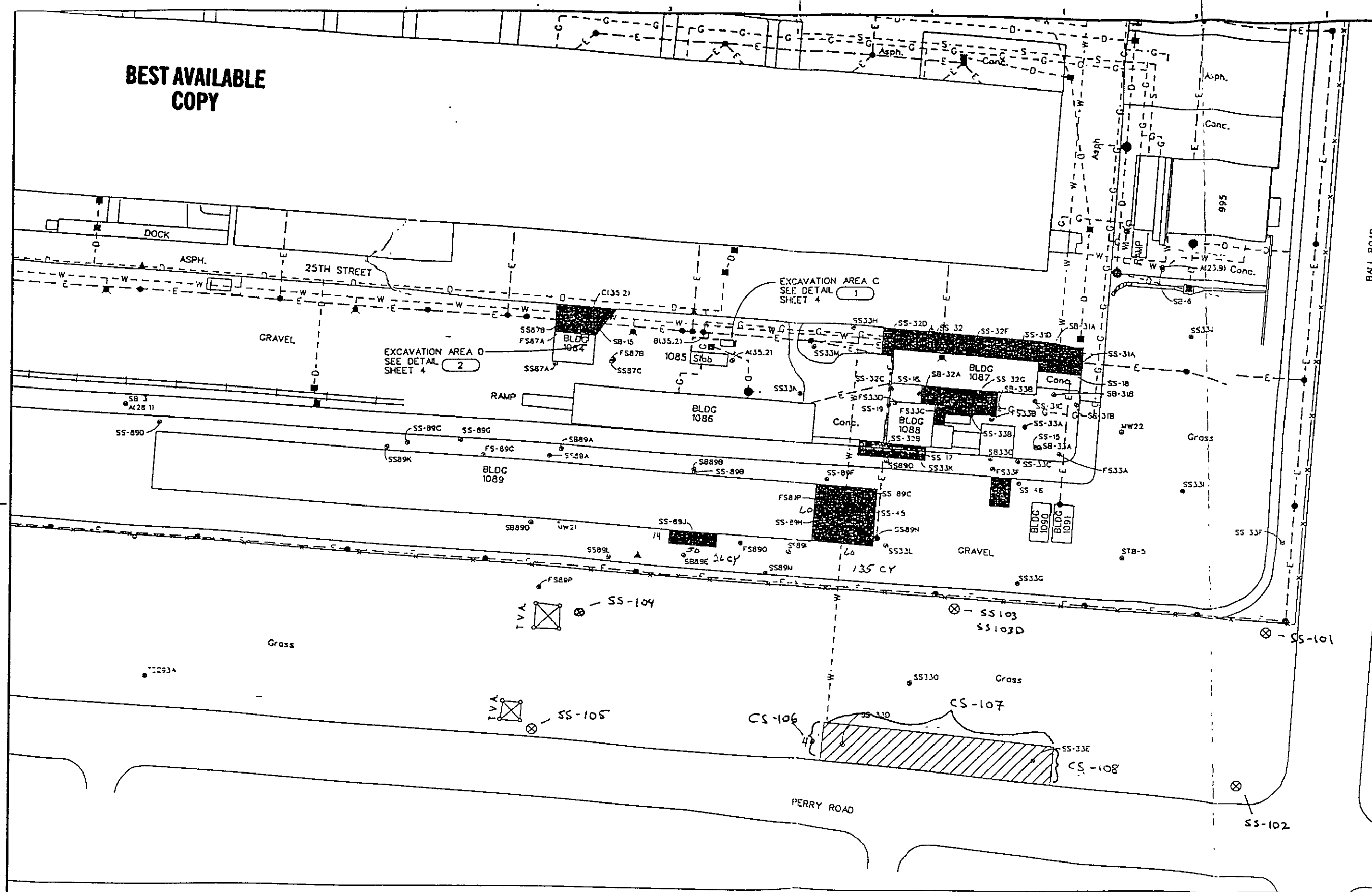
| Initial Excavation    |         |       | Parameter   |             |
|-----------------------|---------|-------|-------------|-------------|
|                       |         |       | Chromium    | Lead        |
| Sample Number         | Date    | Units |             |             |
| 949-01                | 8/30/02 | mg/kg | <b>483</b>  | 614         |
| 949-02                | 8/30/02 | mg/kg | 388         | 350         |
| 949-20 (Dup. Of 02)   | 8/30/02 | mg/kg | 366         | 367         |
| 949-03                | 8/30/02 | mg/kg | 280         | 396         |
| 949-04                | 8/30/02 | mg/kg | <b>1840</b> | <b>1620</b> |
| 949-05                | 8/30/02 | mg/kg | <b>913</b>  | 1190        |
| 949-06                | 8/30/02 | mg/kg | <b>724</b>  | 850         |
| 949-07                | 8/30/02 | mg/kg | <b>1620</b> | <b>1590</b> |
| 949-08                | 8/30/02 | mg/kg | <b>1930</b> | 1480        |
| 949-09                | 8/30/02 | mg/kg | 348         | <b>1600</b> |
| 949-10                | 8/30/02 | mg/kg | 276         | 578         |
| 949-11                | 8/30/02 | mg/kg | <b>835</b>  | 935         |
| 949-21 (Dup of 11)    | 8/30/02 | mg/kg | <b>623</b>  | 980         |
| 949-12                | 8/30/02 | mg/kg | 415         | 729         |
| 949-13                | 8/30/02 | mg/kg | 254         | 346         |
| 949-14                | 8/30/02 | mg/kg | <b>609</b>  | 1040        |
| First Over-Excavation |         |       |             |             |
| 949B-1                | 9/24/01 | mg/kg | 140         | 290         |
| 949B-2                | 9/24/01 | mg/kg | <b>547</b>  | 732         |
| 949B-3                | 9/24/01 | mg/kg | 306         | 349         |
| 949B-4                | 9/24/01 | mg/kg | <b>814</b>  | 790         |
| 949B-5                | 9/24/01 | mg/kg | <b>512</b>  | 256         |
| 949B-6                | 9/24/01 | mg/kg | 75.5        | 99.6        |
| 949B-7                | 9/24/01 | mg/kg | 112         | 168         |
| 949B-8                | 9/24/01 | mg/kg | 109         | 105         |
| 949B-9                | 9/24/01 | mg/kg | <b>1010</b> | <b>2010</b> |
| 949B-10               | 9/24/01 | mg/kg | 198         | 159         |
| Final Over-Excavation |         |       |             |             |
| 949C-1                | 9/25/01 | mg/kg | 47.3        | 132         |

\* Results in bold exceed action levels of  
450 mg/kg (chromium) and 1536 mg/kg (lead)

**2000 Removal Action Report - Parcels 35 & 28 in FU3 - Excerpt**

**Figure A-1      Excavation Plan**

**BEST AVAILABLE  
COPY**



### LEGEND

-  EXCAVATION AREA A:  
EXCAVATE 12" SOIL TO  
LIMITS DEFINED BY  
RESIDENTIAL CLEANUP  
CRITERIA: CONFIRMATORY  
SAMPLE, BACKFILL WITH  
GENERAL FILL; SEED.  
(SEE NOTE 2)
-  EXCAVATION AREA B:  
EXCAVATE 12" SOIL TO  
LIMITS DEFINED BY  
INDUSTRIAL CLEANUP  
CRITERIA: CONFIRMATORY  
SAMPLE; BACKFILL WITH  
GENERAL FILL AND 6" OF  
AGGREGATE SURFACE  
COURSE. (SEE NOTE 3.)
-  TRENCH EXCAVATIONS  
EXCAVATE TO LIMITS  
SHOWN ON SHEET 4;  
CONFIRMATORY SAMPLE;  
BACKFILL WITH GENERAL  
FILL AND 6" OF  
AGGREGATE SURFACE  
COURSE. (SEE NOTE 3)
- EXISTING SAMPLING  
LOCATIONS
- ⊗ ADDITIONAL  
PRE-CONSTRUCTION  
SAMPLING LOCATIONS:  
SAMPLE IN ADDITION TO  
EXCAVATION SITE  
COMPOSITE SAMPLING.  
(SEE NOTE 1.)

NOTES:

1. EXCAVATION LIMITS ARE APPROXIMATE. CONTRACTOR SHALL LAY OUT LOCATIONS IN THE FIELD AND OBTAIN PRE-CONSTRUCTION SCREENING SAMPLES IN ACCORDANCE WITH SPECIFICATION SECTION 02111, EXCAVATION AND HANDLING OF CONTAMINATED SOIL, PRIOR TO OTHER WORK IN AREAS A. (SEE NOTE 4)
2. ACTUAL EXCAVATION REQUIREMENTS AND LIMITS IN AREA A WILL BE DETERMINED BY THE CONTRACTING OFFICER'S REPRESENTATIVE BASED ON REVIEW OF ANALYTICAL RESULTS FROM PRE-CONSTRUCTION SAMPLING
3. BACKFILL TO WITHIN 6" OF SURFACE WITH COMPACTED GENERAL FILL, AND BACKFILL REMAINDER OF EXCAVATION WITH 6" OF COMPACTED AGGREGATE SURFACE COURSE.
4. IF EXCAVATION IS REQUIRED IN AREA A, INSTALL TEMPORARY FENCE BEFORE START OF EXCAVATION

|      |               |    |      |  |          |    |      |
|------|---------------|----|------|--|----------|----|------|
| DSGN | R UNDERWOOD   |    |      |  |          |    |      |
| DR   | R CHRISTENSEN |    |      |  |          |    |      |
| CHK  | M OSBORNE     |    |      |  |          |    |      |
| APVD | R UNDERWOOD   | NO | DATE |  | REVISION | BY | APVD |

11-10-64  
 BAR IS ONE INCH ON  
 ORIGINAL DRAWING.  
 IF NOT ONE INCH ON  
 THIS SHEET, ADJUST  
 SCALES ACCORDINGLY

**CH2MHILL**

REMOVAL ACTION  
PARCELS 35 AND 28  
DEFENSE DEPOT MEMPHIS  
MEMPHIS, TENNESSEE

**Figure A-1**  
**EXCAVATION PLAN**

|                |           |
|----------------|-----------|
| SHEET 3 OF 4   |           |
| DWG NO.        | 3         |
| DATE JUNE 1999 |           |
| PROJ NO.       | 110627.DD |

A large, bold, black letter 'G' is positioned on the right side of the page, partially overlapping a white rectangular area. The 'G' is the central element of the logo.

Attachment G

Supporting Documentation  
for Review of 2000 SLERAs

## **2000 MI RI and 2001 MI ROD Conceptual Site Models**

**Figure 2-21      2001 MI ROD – CSM for FU1 to 6**

**Figure 10-2      2000 MI RI – CSM for FU1**

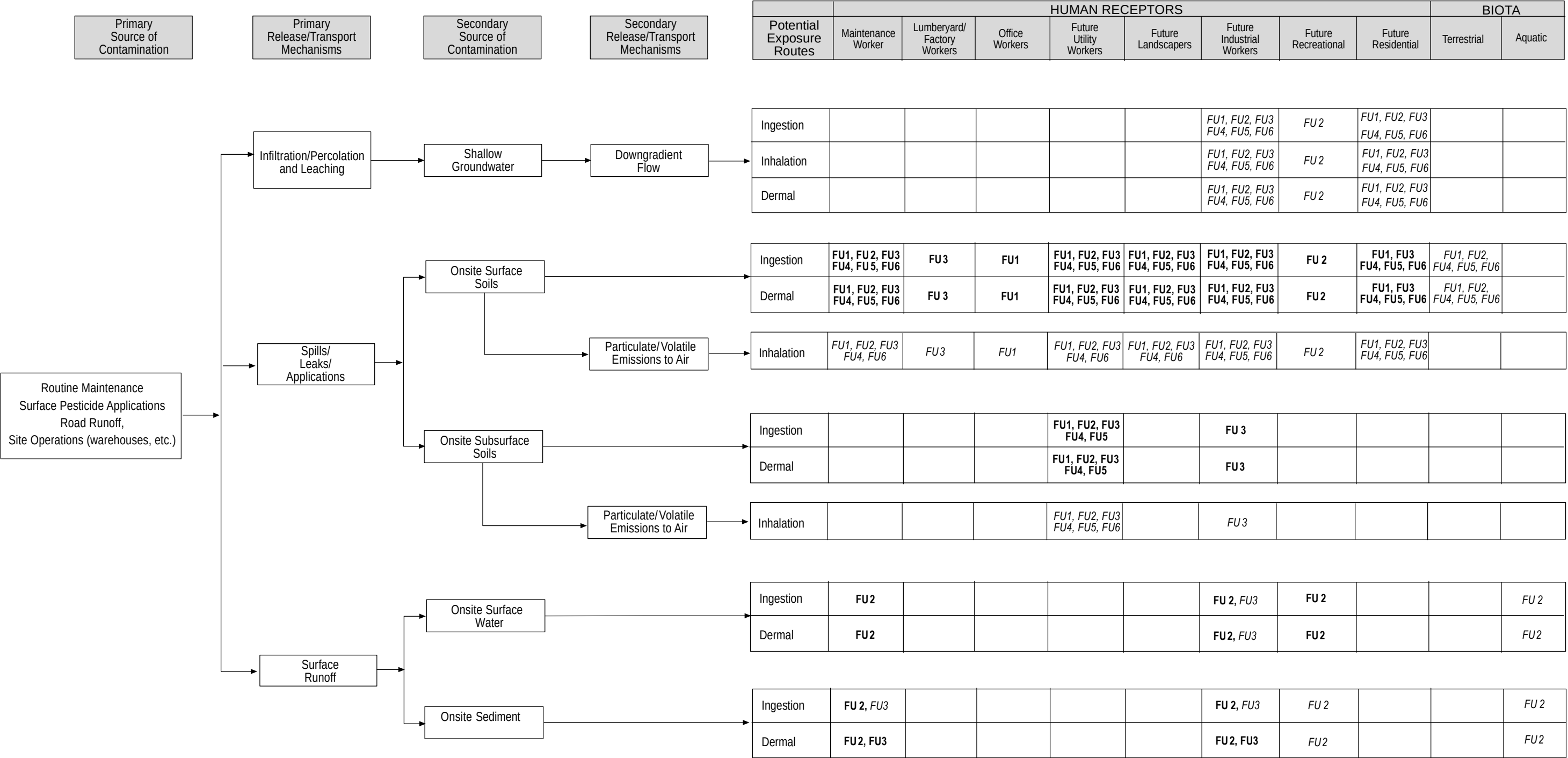
**Figure 14-2      2000 MI RI – CSM for FU2**

**Figure 18-2      2000 MI RI – CSM for FU3**

**Figure 22-2      2000 MI RI – CSM for FU4**

**Figure 26-2      2000 MI RI – CSM for FU5**

**Figure 30-2      2000 MI RI – CSM for FU6**



LEGEND:

FU1 = Primary exposure route  
FU2 = Minor exposure route

Note: Figure 2-21 was taken from the Record of Decision report and revised to accurately reflect exposure pathways evaluated in the risk assessments of the Remedial Investigation Report, i.e., revised the Surface Runoff pathway to identify surface water and sediment as secondary sources of contamination and revised the Infiltration/Percolation and Leaching pathway to have evaluated Future Recreational receptors in FU2 and Future Residential receptors in all FUs.

FIGURE 2-21  
Conceptual Site Model for Potential Human and Ecological Exposures: Functional Units 1-6  
Memphis Depot Main Installation ROD

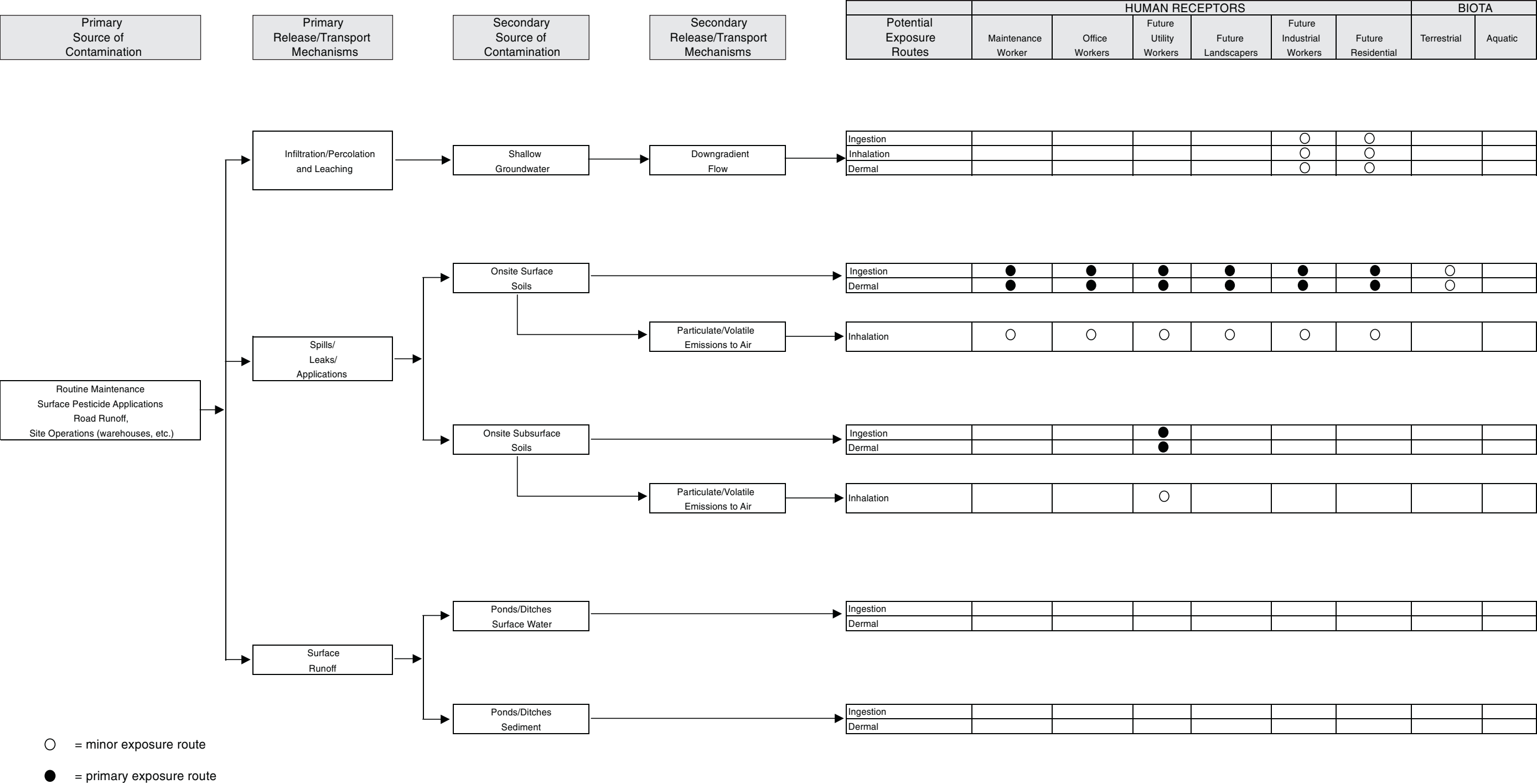


FIGURE 10-2  
CONCEPTUAL SITE MODEL FOR  
POTENTIAL HUMAN AND ECOLOGICAL  
EXPOSURES: FUNCTIONAL UNIT 1  
MEMPHIS DEPOT MAIN INSTALLATION RI

CH2MHILL

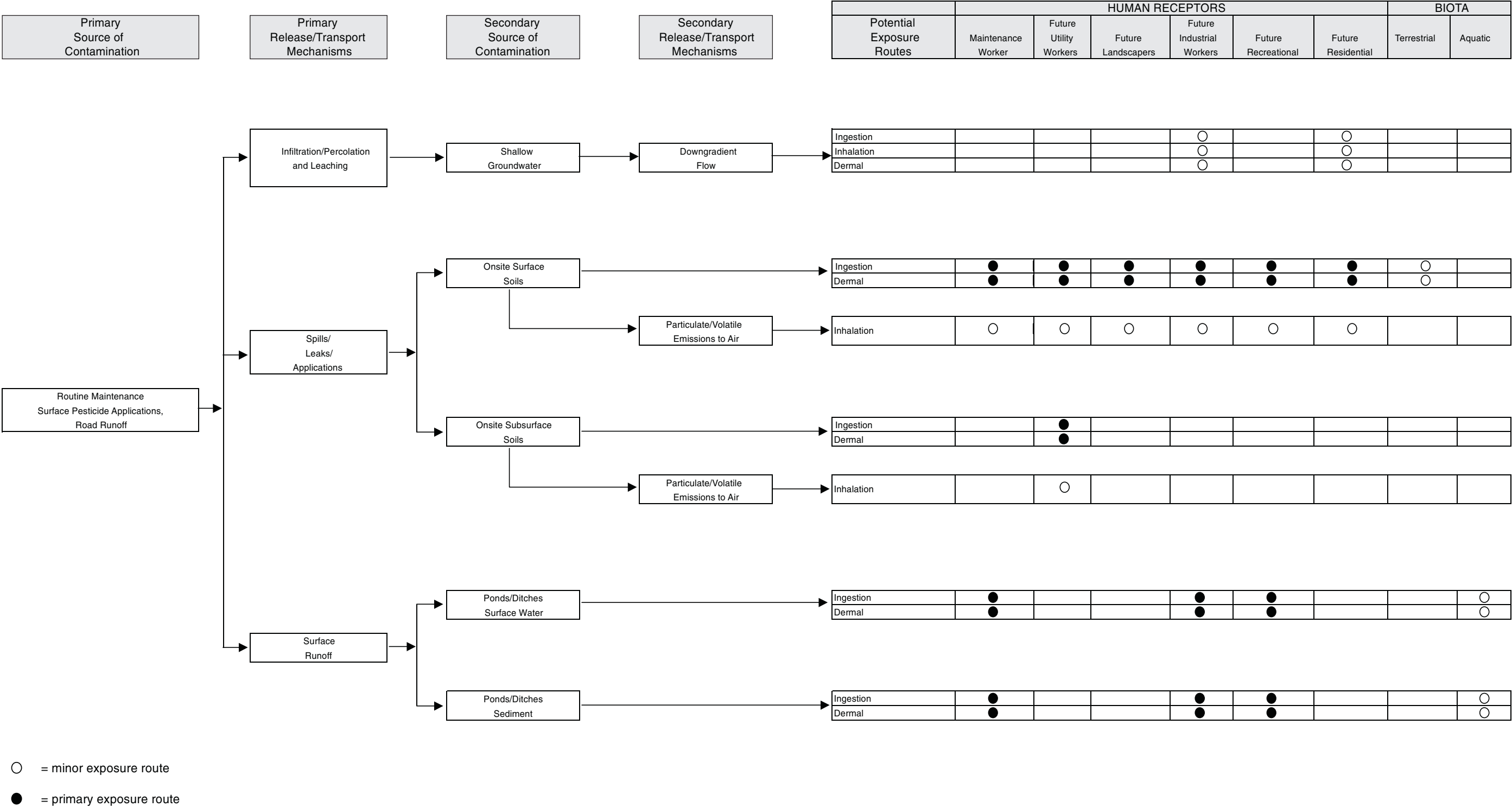


FIGURE 14-2  
CONCEPTUAL SITE MODEL FOR  
POTENTIAL HUMAN AND ECOLOGICAL  
EXPOSURES: FUNCTIONAL UNIT 2  
MEMPHIS DEPOT MAIN INSTALLATION RI

CH2MHILL



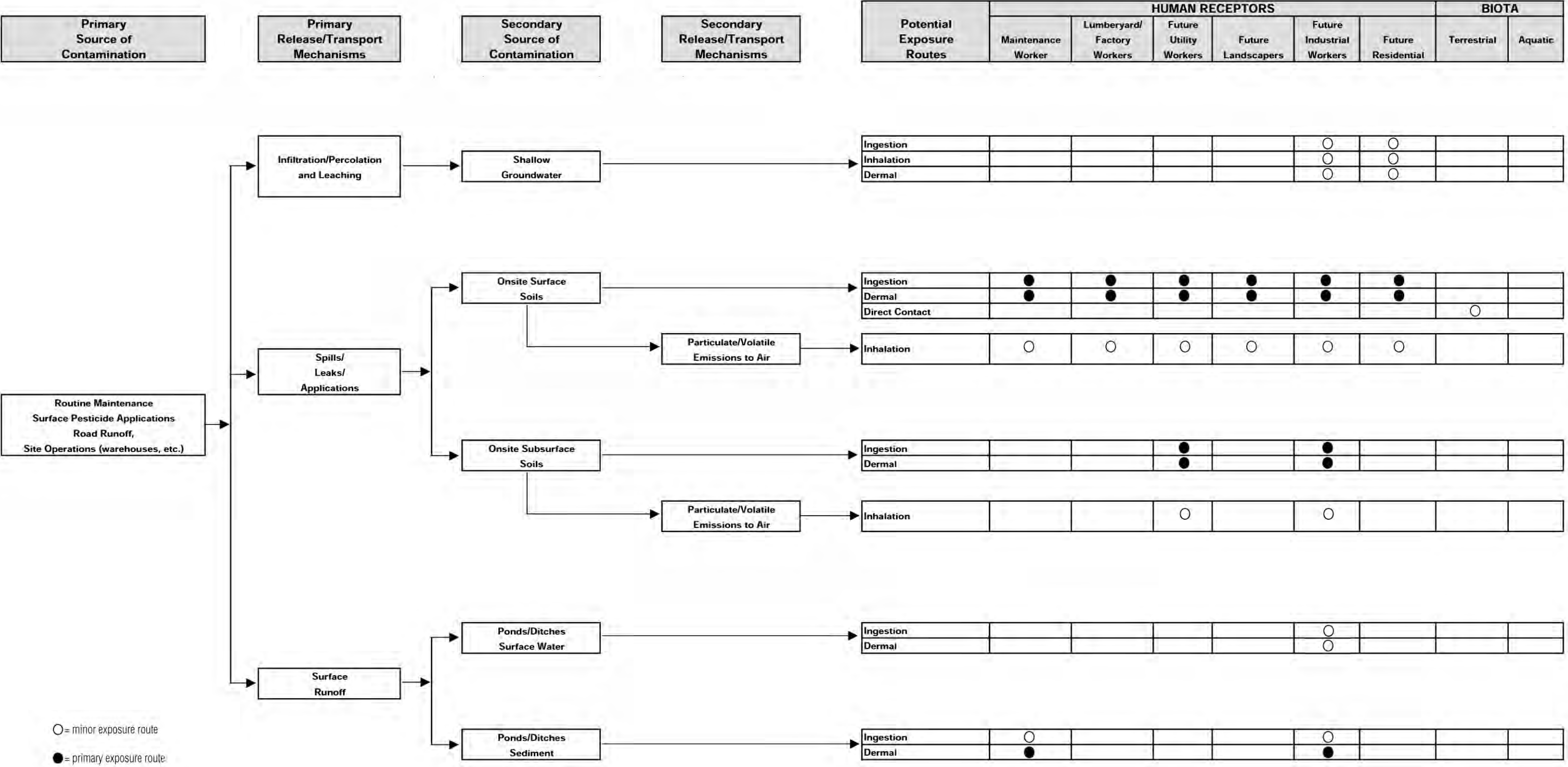
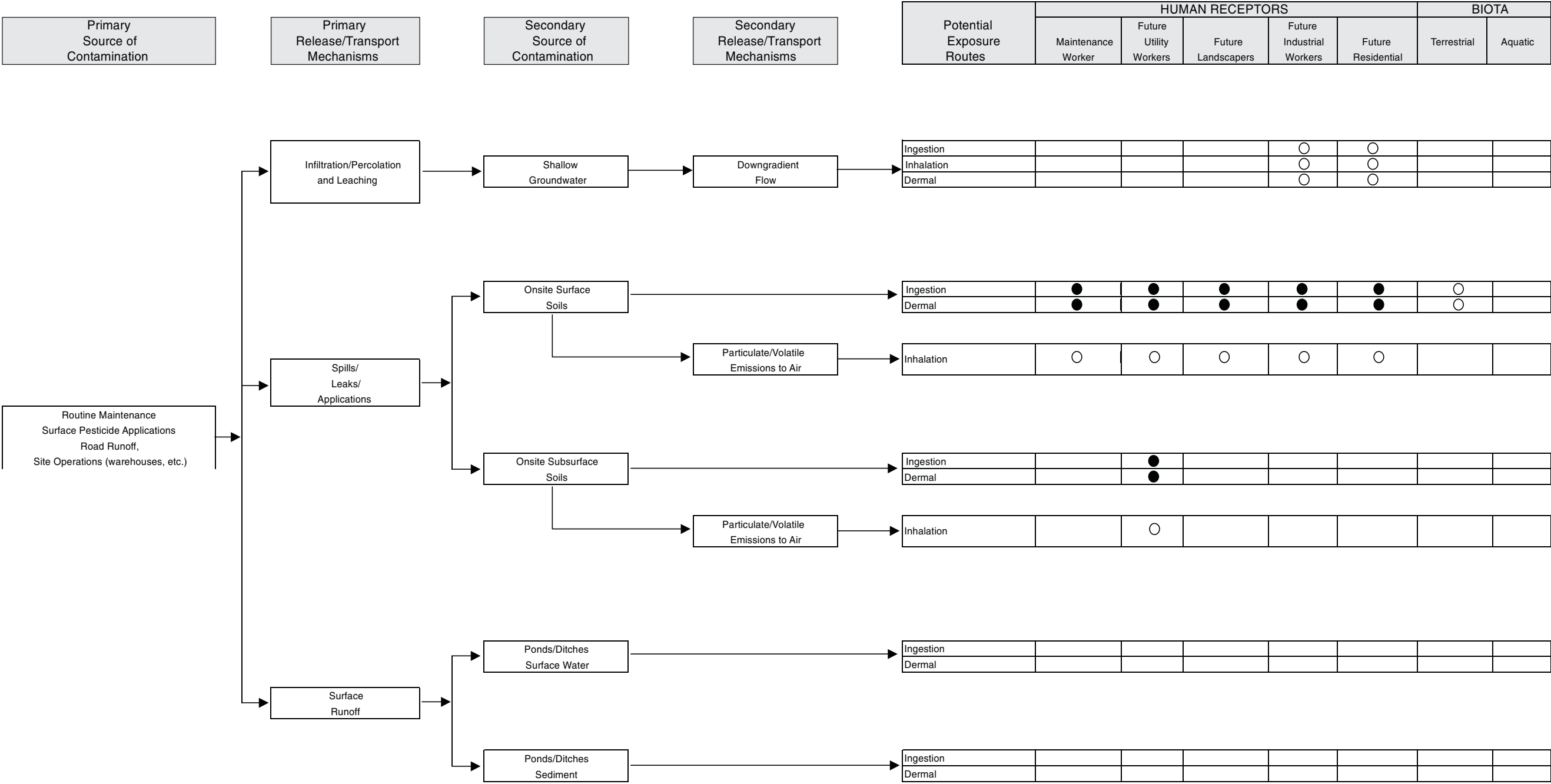
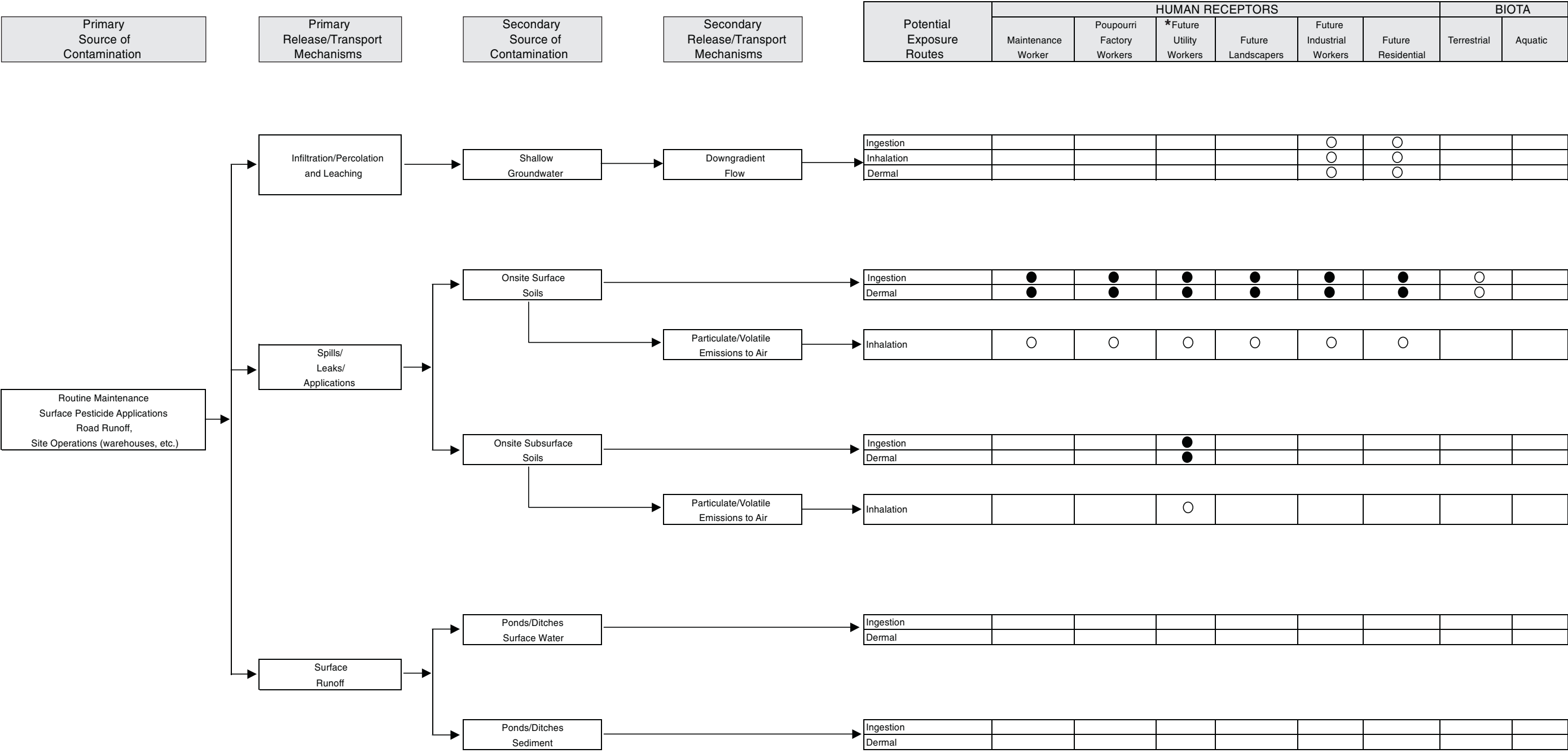


FIGURE 18-2  
CONCEPTUAL SITE MODEL FOR  
POTENTIAL HUMAN AND ECOLOGICAL  
EXPOSURES: FUNCTIONAL UNIT 3  
MEMPHIS DEPOT MAIN INSTALLATION RI



○ = minor exposure route  
● = primary exposure route

**FIGURE 22-2**  
**CONCEPTUAL SITE MODEL FOR**  
**POTENTIAL HUMAN AND ECOLOGICAL**  
**EXPOSURES: FUNCTIONAL UNIT 4**  
 MEMPHIS DEPOT MAIN INSTALLATION RI



○ = Minor exposure route

● = Primary exposure route

\* = This pathway is conservatively quantitated under Surrogate site exposure unit.

FIGURE 26-2  
CONCEPTUAL SITE MODEL FOR  
POTENTIAL HUMAN AND ECOLOGICAL  
EXPOSURES: FUNCTIONAL UNIT 5  
MEMPHIS DEPOT MAIN INSTALLATION RI



**2017 SRI Phases 1 and 2 Report - Excerpt**

**Figure 1      Surface Drainage**



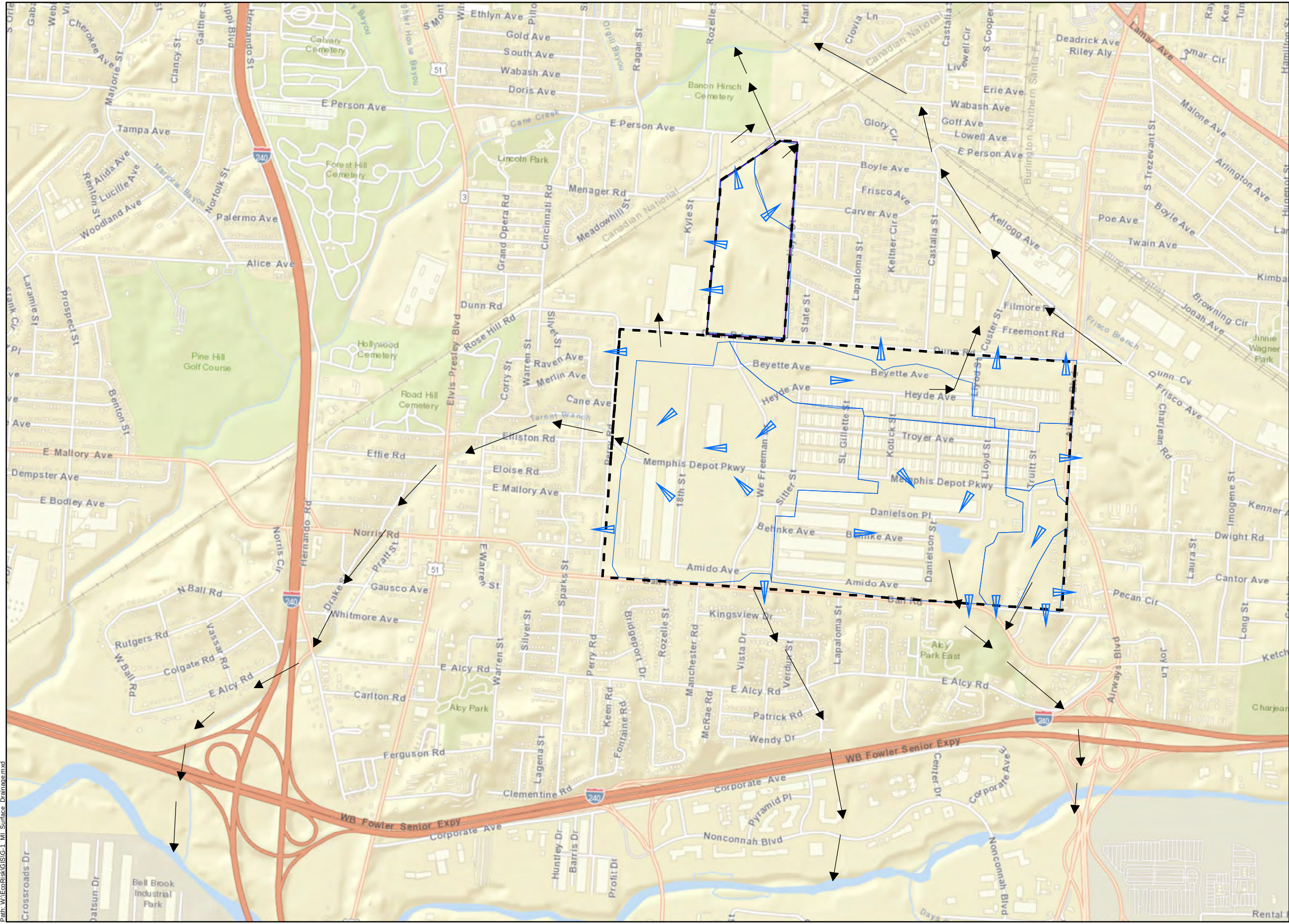


Figure G-1

**SURFACE DRAINAGE**

Human Health and Ecological Risk Assessment

Main Installation Defense Depot  
Memphis, Tennessee

**Legend**

- Stream/Drainage Flow Line
- Surface Water Flow Direction
- Property Boundary
- Basins



0 1,000 2,000  
Feet

Projection: NAD 1927 StatePlane Tennessee  
Units: Feet, Elevation Units: Feet, mean sea level

Date: August 2017  
Edition: Rev 0





## **TABLES**

**(Prepared by HDR)**

|                 |                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------|
| <b>Table 1</b>  | <b>Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria</b> |
| <b>Table 2</b>  | <b>Comparison of Sediment Analytical Results to Ecological Screening Criteria</b>              |
| <b>Table 3</b>  | <b>Comparison of Surface Water Analytical Results to Ecological Screening Criteria</b>         |
| <b>Table 4a</b> | <b>Comparison of Soil Dioxin and Furan Analytical Results to Screening Criteria</b>            |
| <b>Table 4b</b> | <b>Comparison of Sediment Dioxin and Furan Analytical Results to Screening Criteria</b>        |
| <b>Table 4c</b> | <b>Comparison of Surface Water Dioxin and Furan Analytical Results to Screening Criteria</b>   |

Table 1



Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Constituent                 | CASRN      | USEPA R4 Soil Screening Level (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|-----------------------------|------------|---------------------------------------|----------------------------------------|------|------------------------------------------------|
| 1  | VOC               | 2-HEXANONE                  | 591-78-6   | 0.36                                  | 0.003                                  | J    | NA                                             |
| 1  | VOC               | ACETONE                     | 67-64-1    | 1.2                                   | 0.017                                  |      | NA                                             |
| 1  | VOC               | BENZENE                     | 71-43-2    | 0.12                                  | 0.006                                  | J    | 0.05                                           |
| 1  | VOC               | BROMOMETHANE                | 74-83-9    | 0.002                                 | 0.002                                  | J    | NA                                             |
| 1  | VOC               | ETHYLBENZENE                | 100-41-4   | 0.27                                  | 0.007                                  | J    | 0.05                                           |
| 1  | VOC               | METHYL ETHYL KETONE         | 78-93-3    | 1                                     | 0.081                                  |      | NA                                             |
| 1  | VOC               | TOLUENE                     | 108-88-3   | 0.15                                  | 0.014                                  |      | 0.05                                           |
| 1  | VOC               | TOTAL XYLENES               | 1330-20-7  | 0.1                                   | 0.009                                  | J    | NA                                             |
| 1  | VOC               | TRICHLOROETHYLENE (TCE)     | 79-01-6    | 0.06                                  | 0.002                                  | J    | 0.001                                          |
| 1  | TPH               | PETROLEUM HYDROCARBONS      | TPH        | NA                                    | 64.1                                   |      | NA                                             |
| 1  | SVOC              | 2-METHYLNAPHTHALENE         | 91-57-6    | 29                                    | 0.6                                    | J    | 0.1                                            |
| 1  | SVOC              | ACENAPHTHENE                | 83-32-9    | 29                                    | 5.7                                    |      | 20                                             |
| 1  | SVOC              | ACENAPHTHYLENE              | 208-96-8   | 29                                    | 9.5                                    | J    | 0.1                                            |
| 1  | SVOC              | ANTHRACENE                  | 120-12-7   | 29                                    | 12                                     |      | 0.1                                            |
| 1  | SVOC              | BENZO(a)ANTHRACENE          | 56-55-3    | 1.1                                   | 55                                     |      | 0.1                                            |
| 1  | SVOC              | BENZO(a)PYRENE              | 50-32-8    | 1.1                                   | 67                                     |      | 0.1                                            |
| 1  | SVOC              | BENZO(b)FLUORANTHENE        | 205-99-2   | 1.1                                   | 65                                     |      | 0.1                                            |
| 1  | SVOC              | BENZO(g,h,i)PERYLENE        | 191-24-2   | 1.1                                   | 48                                     |      | 0.1                                            |
| 1  | SVOC              | BENZO(k)FLUORANTHENE        | 207-08-9   | 1.1                                   | 71                                     |      | 0.1                                            |
| 1  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE | 117-81-7   | 0.02                                  | 0.31                                   | J    | 0.1                                            |
| 1  | SVOC              | CARBAZOLE                   | 86-74-8    | 0.07                                  | 13                                     | J    | NA                                             |
| 1  | SVOC              | CHRYSENE                    | 218-01-9   | 1.1                                   | 68                                     |      | 0.1                                            |
| 1  | SVOC              | DIBENZ(a,h)ANTHRACENE       | 53-70-3    | 1.1                                   | 2.1                                    |      | 0.1                                            |
| 1  | SVOC              | Di-n-BUTYL PHTHALATE        | 84-74-2    | 0.011                                 | 0.056                                  | J    | 0.1                                            |
| 1  | SVOC              | FLUORANTHENE                | 206-44-0   | 1.1                                   | 130                                    |      | 0.1                                            |
| 1  | SVOC              | FLUORENE                    | 86-73-7    | 29                                    | 5.2                                    |      | 0.1                                            |
| 1  | SVOC              | INDENO(1,2,3-c,d)PYRENE     | 193-39-5   | 1.1                                   | 44                                     |      | 0.1                                            |
| 1  | SVOC              | NAPHTHALENE                 | 91-20-3    | 29                                    | 1.3                                    | J    | 0.1                                            |
| 1  | SVOC              | PHENANTHRENE                | 85-01-8    | 29                                    | 61                                     |      | 0.1                                            |
| 1  | SVOC              | PYRENE                      | 129-00-0   | 1.1                                   | 120                                    |      | 0.1                                            |
| 1  | PEST              | ALPHA-CHLORDANE             | 5103-71-9  | 0.0029                                | 0.21                                   |      | 0.1                                            |
| 1  | PEST              | DDD                         | 72-54-8    | 0.021                                 | 0.0028                                 | J    | 0.0025                                         |
| 1  | PEST              | DDE                         | 72-55-9    | 0.021                                 | 7.3                                    |      | 0.0025                                         |
| 1  | PEST              | DDT                         | 50-29-3    | 0.021                                 | 10                                     |      | 0.0025                                         |
| 1  | PEST              | DIBENZOFURAN                | 132-64-9   | 0.15                                  | 2.2                                    | J    | 0.1                                            |
| 1  | PEST              | DIELDRIN                    | 60-57-1    | 0.0029                                | 4                                      | J    | 0.0005                                         |
| 1  | PEST              | GAMMA-CHLORDANE             | 5566-34-7  | 0.02                                  | 0.15                                   | J    | 0.1                                            |
| 1  | PCB               | PCB-1260 (AROCOR 1260)      | 11096-82-5 | 0.041                                 | 6.6                                    |      | 0.02                                           |
| 1  | OTHER             | CARBON DISULFIDE            | 75-15-0    | 0.005                                 | 0.002                                  | J    | NA                                             |
| 1  | ORGANIC           | GAMMA BHC (LINDANE)         | 58-89-9    | 0.0031                                | 0.0029                                 |      | 0.00005                                        |
| 1  | INORGANIC         | ALUMINUM                    | 7429-90-5  | Narrative                             | 13300                                  |      | 50                                             |
| 1  | INORGANIC         | ANTIMONY                    | 7440-36-0  | 0.27                                  | 8                                      |      | 3.5                                            |
| 1  | INORGANIC         | ARSENIC                     | 7440-38-2  | 18                                    | 54.9                                   |      | 10                                             |
| 1  | INORGANIC         | BARIUM                      | 7440-39-3  | 330                                   | 164                                    |      | 165                                            |
| 1  | INORGANIC         | BERYLLIUM                   | 7440-41-7  | 2.5                                   | 2.15                                   | J    | 1.1                                            |
| 1  | INORGANIC         | CADMIUM                     | 7440-43-9  | 0.36                                  | 4.1                                    |      | 1.6                                            |
| 1  | INORGANIC         | CHROMIUM (TOTAL)            | 7440-47-3  | 23                                    | 34.65                                  | J    | 0.4                                            |
| 1  | INORGANIC         | COBALT                      | 7440-48-4  | 13                                    | 7.6                                    |      | 20                                             |
| 1  | INORGANIC         | COPPER                      | 7440-50-8  | 28                                    | 27.2                                   | J    | 40                                             |
| 1  | INORGANIC         | IRON                        | 7439-89-6  | Narrative                             | 20400                                  |      | 200                                            |
| 1  | INORGANIC         | LEAD                        | 7439-92-1  | 11                                    | 297                                    | J    | 50                                             |
| 1  | INORGANIC         | MANGANESE                   | 7439-96-5  | 220                                   | 657                                    |      | 100                                            |
| 1  | INORGANIC         | MERCURY                     | 7439-97-6  | 0.013                                 | 2.13                                   |      | 0.1                                            |
| 1  | INORGANIC         | NICKEL                      | 7440-02-0  | 38                                    | 20.9                                   |      | 30                                             |
| 1  | INORGANIC         | SELENIUM                    | 7782-49-2  | 0.52                                  | 3.4                                    | J    | 0.81                                           |
| 1  | INORGANIC         | SILVER                      | 7440-22-4  | 4.2                                   | 0.67                                   |      | 2                                              |
| 1  | INORGANIC         | VANADIUM                    | 7440-62-2  | 7.8                                   | 28.6                                   |      | 2                                              |
| 1  | INORGANIC         | ZINC                        | 7440-66-6  | 46                                    | 646                                    |      | 50                                             |
| 2  | VOC               | 2-HEXANONE                  | 591-78-6   | 0.36                                  | 0.002                                  | J    | NA                                             |
| 2  | VOC               | ACETONE                     | 67-64-1    | 1.2                                   | 0.095                                  |      | NA                                             |
| 2  | VOC               | BENZENE                     | 71-43-2    | 0.12                                  | 0.002                                  | J    | 0.05                                           |
| 2  | VOC               | BROMOMETHANE                | 74-83-9    | 0.002                                 | 0.002                                  | J    | NA                                             |
| 2  | VOC               | METHYL ETHYL KETONE         | 78-93-3    | 1                                     | 0.038                                  |      | NA                                             |
| 2  | VOC               | METHYLENE CHLORIDE          | 75-09-2    | 0.21                                  | 0.003                                  | J    | 0.1                                            |
| 2  | VOC               | TETRACHLOROETHYLENE (PCE)   | 127-18-4   | 0.06                                  | 0.073                                  | J    | 0.01                                           |
| 2  | VOC               | TOLUENE                     | 108-88-3   | 0.15                                  | 0.003                                  | J    | 0.05                                           |
| 2  | VOC               | TOTAL 1,2-DICHLOROETHENE    | 540-59-0   | 0.04                                  | Value cutoff in pdf, <1                | J    | 0.1                                            |
| 2  | VOC               | TOTAL XYLENES               | 1330-20-7  | 0.1                                   | 0.001                                  | J    | NA                                             |
| 2  | VOC               | TRICHLOROETHYLENE (TCE)     | 79-01-6    | 0.06                                  | 0.003                                  | J    | 0.001                                          |
| 2  | SVOC              | ACENAPHTHENE                | 83-32-9    | 29                                    | 0.13                                   | J    | 20                                             |



Table 1

Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                 | CASRN     | USEPA R4 Soil Screening Level (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|-----------------------------|-----------|---------------------------------------|----------------------------------------|------|------------------------------------------------|
| 2  | SVOC              | ANTHRACENE                  | 120-12-7  | 29                                    | 0.27                                   | J    | 0.1                                            |
| 2  | SVOC              | BENZO(a)ANTHRACENE          | 56-55-3   | 1.1                                   | 0.57                                   |      | 0.1                                            |
| 2  | SVOC              | BENZO(a)PYRENE              | 50-32-8   | 1.1                                   | 0.44                                   |      | 0.1                                            |
| 2  | SVOC              | BENZO(b)FLUORANTHENE        | 205-99-2  | 1.1                                   | 0.46                                   |      | 0.1                                            |
| 2  | SVOC              | BENZO(g,h,i)PERYLENE        | 191-24-2  | 1.1                                   | 0.29                                   | J    | 0.1                                            |
| 2  | SVOC              | BENZO(k)FLUORANTHENE        | 207-08-9  | 1.1                                   | 0.4                                    | J    | 0.1                                            |
| 2  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE | 117-81-7  | 0.02                                  | 0.23                                   | J    | 0.1                                            |
| 2  | SVOC              | CARBAZOLE                   | 86-74-8   | 0.07                                  | 0.18                                   | J    | NA                                             |
| 2  | SVOC              | CHRYSENE                    | 218-01-9  | 1.1                                   | 0.62                                   |      | 0.1                                            |
| 2  | SVOC              | DIBENZ(a,h)ANTHRACENE       | 53-70-3   | 1.1                                   | 0.083                                  | J    | 0.1                                            |
| 2  | SVOC              | FLUORANTHENE                | 206-44-0  | 1.1                                   | 1.2                                    |      | 0.1                                            |
| 2  | SVOC              | FLUORENE                    | 86-73-7   | 29                                    | 0.14                                   |      | 0.1                                            |
| 2  | SVOC              | INDENO(1,2,3-c,d)PYRENE     | 193-39-5  | 1.1                                   | 0.26                                   |      | 0.1                                            |
| 2  | SVOC              | PENTACHLOROPHENOL           | 87-86-5   | 2.1                                   | 0.054                                  | J    | 0.002                                          |
| 2  | SVOC              | PHENANTHRENE                | 85-01-8   | 29                                    | 1                                      |      | 0.1                                            |
| 2  | SVOC              | PYRENE                      | 129-00-0  | 1.1                                   | 1.1                                    |      | 0.1                                            |
| 2  | PEST              | ALPHA-CHLORDANE             | 5103-71-9 | 0.0029                                | 1.4                                    |      | 0.1                                            |
| 2  | PEST              | DDD                         | 72-54-8   | 0.021                                 | 0.017                                  |      | 0.0025                                         |
| 2  | PEST              | DDE                         | 72-55-9   | 0.021                                 | 1                                      |      | 0.0025                                         |
| 2  | PEST              | DDT                         | 50-29-3   | 0.021                                 | 6.7                                    |      | 0.0025                                         |
| 2  | PEST              | DIBENZOFURAN                | 132-64-9  | 0.15                                  | 0.056                                  | J    | 0.1                                            |
| 2  | PEST              | DIELDRIN                    | 60-57-1   | 0.0029                                | 10                                     | J    | 0.0005                                         |
| 2  | PEST              | GAMMA-CHLORDANE             | 5566-34-7 | 0.02                                  | 1.4                                    |      | 0.1                                            |
| 2  | OTHER             | CARBON DISULFIDE            | 75-15-0   | 0.005                                 | 0.002                                  | J    | NA                                             |
| 2  | INORGANIC         | ALUMINUM                    | 7429-90-5 | Narrative                             | 15900                                  |      | 50                                             |
| 2  | INORGANIC         | ANTIMONY                    | 7440-36-0 | 0.27                                  | 1.7                                    | J    | 3.5                                            |
| 2  | INORGANIC         | ARSENIC                     | 7440-38-2 | 18                                    | 50.5                                   | J    | 10                                             |
| 2  | INORGANIC         | BARIUM                      | 7440-39-3 | 330                                   | 200                                    |      | 165                                            |
| 2  | INORGANIC         | BERYLLIUM                   | 7440-41-7 | 2.5                                   | 1.1                                    |      | 1.1                                            |
| 2  | INORGANIC         | CADMIUM                     | 7440-43-9 | 0.36                                  | 1.3                                    |      | 1.6                                            |
| 2  | INORGANIC         | CHROMIUM (TOTAL)            | 7440-47-3 | 23                                    | 40.3                                   |      | 0.4                                            |
| 2  | INORGANIC         | COBALT                      | 7440-48-4 | 13                                    | 12.6                                   |      | 20                                             |
| 2  | INORGANIC         | COPPER                      | 7440-50-8 | 28                                    | 55.4                                   |      | 40                                             |
| 2  | INORGANIC         | IRON                        | 7439-89-6 | Narrative                             | 23000                                  |      | 200                                            |
| 2  | INORGANIC         | LEAD                        | 7439-92-1 | 11                                    | 318                                    |      | 50                                             |
| 2  | INORGANIC         | MANGANESE                   | 7439-96-5 | 220                                   | 1860                                   |      | 100                                            |
| 2  | INORGANIC         | MERCURY                     | 7439-97-6 | 0.013                                 | 0.08                                   |      | 0.1                                            |
| 2  | INORGANIC         | NICKEL                      | 7440-02-0 | 38                                    | 57.6                                   |      | 30                                             |
| 2  | INORGANIC         | SELENIUM                    | 7782-49-2 | 0.52                                  | 2.1                                    |      | 0.81                                           |
| 2  | INORGANIC         | VANADIUM                    | 7440-62-2 | 7.8                                   | 37.2                                   |      | 2                                              |
| 2  | INORGANIC         | ZINC                        | 7440-66-6 | 46                                    | 426                                    |      | 50                                             |
| 3  | VOC               | 2-HEXANONE                  | 591-78-6  | 0.36                                  | 0.008                                  | J    | NA                                             |
| 3  | VOC               | ACETONE                     | 67-64-1   | 1.2                                   | 0.14                                   |      | NA                                             |
| 3  | VOC               | BENZENE                     | 71-43-2   | 0.12                                  | 0.007                                  | J    | 0.05                                           |
| 3  | VOC               | BROMOMETHANE                | 74-83-9   | 0.002                                 | 0.002                                  | J    | NA                                             |
| 3  | VOC               | METHYL ETHYL KETONE         | 78-93-3   | 1                                     | 0.044                                  |      | NA                                             |
| 3  | VOC               | METHYL ISOBUTYL KETONE      | 108-10-1  | NA                                    | 0.002                                  | J    | NA                                             |
| 3  | VOC               | METHYLENE CHLORIDE          | 75-09-2   | 0.21                                  | 0.007                                  | J    | 0.1                                            |
| 3  | VOC               | TOLUENE                     | 108-88-3  | 0.15                                  | 0.004                                  | J    | 0.05                                           |
| 3  | VOC               | TOTAL XYLENES               | 1330-20-7 | 0.1                                   | 0.003                                  | J    | NA                                             |
| 3  | VOC               | TRICHLOROETHYLENE (TCE)     | 79-01-6   | 0.06                                  | 0.001                                  | J    | 0.001                                          |
| 3  | TPH               | PETROLEUM HYDROCARBONS      | TPH       | NA                                    | 274                                    |      | NA                                             |
| 3  | SVOC              | 2-METHYLNAPHTHALENE         | 91-57-6   | 29                                    | 0.51                                   |      | 0.1                                            |
| 3  | SVOC              | ACENAPHTHENE                | 83-32-9   | 29                                    | 5                                      | J    | 20                                             |
| 3  | SVOC              | ACENAPHTHYLENE              | 208-96-8  | 29                                    | 0.14                                   |      | 0.1                                            |
| 3  | SVOC              | ANTHRACENE                  | 120-12-7  | 29                                    | 11                                     | J    | 0.1                                            |
| 3  | SVOC              | BENZO(a)ANTHRACENE          | 56-55-3   | 1.1                                   | 40                                     |      | 0.1                                            |
| 3  | SVOC              | BENZO(a)PYRENE              | 50-32-8   | 1.1                                   | 37                                     |      | 0.1                                            |
| 3  | SVOC              | BENZO(b)FLUORANTHENE        | 205-99-2  | 1.1                                   | 39                                     |      | 0.1                                            |
| 3  | SVOC              | BENZO(g,h,i)PERYLENE        | 191-24-2  | 1.1                                   | 22                                     |      | 0.1                                            |
| 3  | SVOC              | BENZO(k)FLUORANTHENE        | 207-08-9  | 1.1                                   | 34                                     |      | 0.1                                            |
| 3  | SVOC              | BENZYL BUTYL PHTHALATE      | 85-68-7   | 0.59                                  | 0.083                                  | J    | 0.1                                            |
| 3  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE | 117-81-7  | 0.02                                  | 5.6                                    |      | 0.1                                            |
| 3  | SVOC              | CARBAZOLE                   | 86-74-8   | 0.07                                  | 10                                     | J    | NA                                             |
| 3  | SVOC              | CHRYSENE                    | 218-01-9  | 1.1                                   | 46                                     |      | 0.1                                            |
| 3  | SVOC              | DIBENZ(a,h)ANTHRACENE       | 53-70-3   | 1.1                                   | 1.2                                    |      | 0.1                                            |
| 3  | SVOC              | DIETHYL PHTHALATE           | 84-66-2   | 0.25                                  | 0.9                                    |      | 0.1                                            |
| 3  | SVOC              | Di-n-BUTYL PHTHALATE        | 84-74-2   | 0.011                                 | 0.18                                   | J    | 0.1                                            |
| 3  | SVOC              | FLUORANTHENE                | 206-44-0  | 1.1                                   | 71                                     |      | 0.1                                            |
| 3  | SVOC              | FLUORENE                    | 86-73-7   | 29                                    | 4.8                                    | J    | 0.1                                            |

Table 1



Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Constituent                                | CASRN      | USEPA R4 Soil Screening Level (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|--------------------------------------------|------------|---------------------------------------|----------------------------------------|------|------------------------------------------------|
| 3  | SVOC              | INDENO(1,2,3-c,d)PYRENE                    | 193-39-5   | 1.1                                   | 22                                     |      | 0.1                                            |
| 3  | SVOC              | NAPHTHALENE                                | 91-20-3    | 29                                    | 0.63                                   | J    | 0.1                                            |
| 3  | SVOC              | PENTACHLOROPHENOL                          | 87-86-5    | 2.1                                   | 0.68                                   |      | 0.002                                          |
| 3  | SVOC              | PHENANTHRENE                               | 85-01-8    | 29                                    | 52                                     |      | 0.1                                            |
| 3  | SVOC              | PYRENE                                     | 129-00-0   | 1.1                                   | 71                                     |      | 0.1                                            |
| 3  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^  | 67562-39-4 | 0.00000315                            | 0.00029                                | J    | 0.1                                            |
| 3  | PEST              | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN ^^^  | 55673-89-7 | 0.00000315                            | 0.000003                               | J    | 0.1                                            |
| 3  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN ^^^     | 70648-26-9 | 0.00000315                            | 0.000004                               | J    | 0.1                                            |
| 3  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN ^^^     | 57117-44-9 | 0.00000315                            | 0.000002                               | J    | 0.1                                            |
| 3  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN ^^^     | 60851-34-5 | 0.00000315                            | 0.000003                               | J    | 0.1                                            |
| 3  | PEST              | ALPHA-CHLORDANE                            | 5103-71-9  | 0.0029                                | 0.61                                   |      | 0.1                                            |
| 3  | PEST              | DDD                                        | 72-54-8    | 0.021                                 | 0.046                                  |      | 0.0025                                         |
| 3  | PEST              | DDE                                        | 72-55-9    | 0.021                                 | 0.17                                   | J    | 0.0025                                         |
| 3  | PEST              | DDT                                        | 50-29-3    | 0.021                                 | 0.41                                   |      | 0.0025                                         |
| 3  | PEST              | DIBENZOFURAN                               | 132-64-9   | 0.15                                  | 2.4                                    | J    | 0.1                                            |
| 3  | PEST              | DIELDRIN                                   | 60-57-1    | 0.0029                                | 0.18                                   |      | 0.0005                                         |
| 3  | PEST              | GAMMA-CHLORDANE                            | 5566-34-7  | 0.02                                  | 0.58                                   |      | 0.1                                            |
| 3  | PEST              | HEPTACHLOR                                 | 76-44-8    | 0.0016                                | 0.04                                   | J    | 0.1                                            |
| 3  | PEST              | OCTACHLORODIBENZOFURAN ^^^                 | 39001-02-0 | 0.00000315                            | 0.000697                               | J    | 0.1                                            |
| 3  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN ^^^ | 57653-85-7 | 0.00000315                            | 0.000008                               | J    | 0.1                                            |
| 3  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN ^^^ | 19408-74-3 | 0.00000315                            | 0.000005                               | J    | 0.1                                            |
| 3  | OTHER             | CARBON DISULFIDE                           | 75-15-0    | 0.005                                 | 0.002                                  | J    | NA                                             |
| 3  | PEST              | OCTACHLORODIBENZO-p-DIOXIN ^^^             | 3268-87-9  | 0.00000315                            | 0.01025                                |      | 0.1                                            |
| 3  | PEST              | TCDD Equivalent ^^^                        | 1746-01-6  | 0.00000315                            | 0.0000103                              |      | NA                                             |
| 3  | INORGANIC         | ALUMINUM                                   | 7429-90-5  | Narrative                             | 13600                                  |      | 50                                             |
| 3  | INORGANIC         | ANTIMONY                                   | 7440-36-0  | 0.27                                  | 22.3                                   |      | 3.5                                            |
| 3  | INORGANIC         | ARSENIC                                    | 7440-38-2  | 18                                    | 49.2                                   |      | 10                                             |
| 3  | INORGANIC         | BARIUM                                     | 7440-39-3  | 330                                   | 432                                    |      | 165                                            |
| 3  | INORGANIC         | BERYLLIUM                                  | 7440-41-7  | 2.5                                   | 2                                      |      | 1.1                                            |
| 3  | INORGANIC         | CADMIUM                                    | 7440-43-9  | 0.36                                  | 8.1                                    |      | 1.6                                            |
| 3  | INORGANIC         | CHROMIUM III                               | 16065-83-1 | 26                                    | 403                                    |      | 0.4                                            |
| 3  | INORGANIC         | CHROMIUM, HEXAVALENT                       | 18540-29-9 | 0.34                                  | 0.12                                   |      | 0.4                                            |
| 3  | INORGANIC         | CHROMIUM (TOTAL)                           | 7440-47-3  | 23                                    | 915                                    |      | 0.4                                            |
| 3  | INORGANIC         | COBALT                                     | 7440-48-4  | 13                                    | 8.8                                    |      | 20                                             |
| 3  | INORGANIC         | COPPER                                     | 7440-50-8  | 28                                    | 235                                    |      | 40                                             |
| 3  | INORGANIC         | IRON                                       | 7439-89-6  | Narrative                             | 51300                                  |      | 200                                            |
| 3  | INORGANIC         | LEAD                                       | 7439-92-1  | 11                                    | 4150                                   |      | 50                                             |
| 3  | INORGANIC         | MANGANESE                                  | 7439-96-5  | 220                                   | 634                                    |      | 100                                            |
| 3  | INORGANIC         | MERCURY                                    | 7439-97-6  | 0.013                                 | 2.1                                    |      | 0.1                                            |
| 3  | INORGANIC         | NICKEL                                     | 7440-02-0  | 38                                    | 76.3                                   |      | 30                                             |
| 3  | INORGANIC         | SELENIUM                                   | 7782-49-2  | 0.52                                  | 9.5                                    | J    | 0.81                                           |
| 3  | INORGANIC         | SILVER                                     | 7440-22-4  | 4.2                                   | 2.5                                    |      | 2                                              |
| 3  | INORGANIC         | VANADIUM                                   | 7440-62-2  | 7.8                                   | 76.7                                   |      | 2                                              |
| 3  | INORGANIC         | ZINC                                       | 7440-66-6  | 46                                    | 4000                                   |      | 50                                             |
| 4  | WETCHEM           | ALKALINITY (TOTAL) (AS CaCO3)              | ALK        | NA                                    | 465000                                 |      | NA                                             |
| 4  | VOC               | 1,1,2,2-TETRACHLOROETHANE                  | 79-34-5    | 0.127                                 | 0.007                                  | J    | 0.1                                            |
| 4  | VOC               | 2-HEXANONE                                 | 591-78-6   | 0.36                                  | 0.001                                  | J    | NA                                             |
| 4  | VOC               | ACETONE                                    | 67-64-1    | 1.2                                   | 0.31                                   |      | NA                                             |
| 4  | VOC               | BENZENE                                    | 71-43-2    | 0.12                                  | 0.002                                  | J    | 0.05                                           |
| 4  | VOC               | BROMOMETHANE                               | 74-83-9    | 0.002                                 | 0.003                                  | J    | NA                                             |
| 4  | VOC               | CHLOROMETHANE                              | 74-87-3    | NA                                    | 0.001                                  | J    | 0.1                                            |
| 4  | VOC               | ETHYLBENZENE                               | 100-41-4   | 0.27                                  | 0.008                                  | J    | 0.05                                           |
| 4  | VOC               | METHYL ETHYL KETONE                        | 78-93-3    | 1                                     | 0.044                                  |      | NA                                             |
| 4  | VOC               | METHYLENE CHLORIDE                         | 75-09-2    | 0.21                                  | 0.01                                   | J    | 0.1                                            |
| 4  | VOC               | TETRACHLOROETHYLENE (PCE)                  | 127-18-4   | 0.06                                  | 0.008                                  | J    | 0.01                                           |
| 4  | VOC               | TOLUENE                                    | 108-88-3   | 0.15                                  | 0.017                                  |      | 0.05                                           |
| 4  | VOC               | TOTAL XYLENES                              | 1330-20-7  | 0.1                                   | 0.002                                  | J    | NA                                             |
| 4  | VOC               | TRICHLOROETHYLENE (TCE)                    | 79-01-6    | 0.06                                  | 0.005                                  | J    | 0.001                                          |
| 4  | TPH               | PETROLEUM HYDROCARBONS                     | TPH        | NA                                    | 1570                                   |      | NA                                             |
| 4  | SVOC              | 2-METHYLNAPHTHALENE                        | 91-57-6    | 29                                    | 0.13                                   | J    | 0.1                                            |
| 4  | SVOC              | ACENAPHTHENE                               | 83-32-9    | 29                                    | 1.2                                    | J    | 20                                             |
| 4  | SVOC              | ACENAPHTHYLENE                             | 208-96-8   | 29                                    | 0.2                                    | J    | 0.1                                            |
| 4  | SVOC              | ANTHRACENE                                 | 120-12-7   | 29                                    | 1.9                                    |      | 0.1                                            |
| 4  | SVOC              | BENZO(a)ANTHRACENE                         | 56-55-3    | 1.1                                   | 6.6                                    |      | 0.1                                            |
| 4  | SVOC              | BENZO(a)PYRENE                             | 50-32-8    | 1.1                                   | 6.3                                    |      | 0.1                                            |
| 4  | SVOC              | BENZO(b)FLUORANTHENE                       | 205-99-2   | 1.1                                   | 6.4                                    |      | 0.1                                            |
| 4  | SVOC              | BENZO(g,h,i)PERYLENE                       | 191-24-2   | 1.1                                   | 4.2                                    |      | 0.1                                            |
| 4  | SVOC              | BENZO(k)FLUORANTHENE                       | 207-08-9   | 1.1                                   | 5.7                                    |      | 0.1                                            |
| 4  | SVOC              | BENZYL BUTYL PHTHALATE                     | 85-68-7    | 0.59                                  | 0.7                                    |      | 0.1                                            |
| 4  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE                | 117-81-7   | 0.02                                  | 3                                      |      | 0.1                                            |

Table 1

Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                                   | CASRN      | USEPA R4 Soil Screening Level (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|-----------------------------------------------|------------|---------------------------------------|----------------------------------------|------|------------------------------------------------|
| 4  | SVOC              | CARBAZOLE                                     | 86-74-8    | 0.07                                  | 1.8                                    |      | NA                                             |
| 4  | SVOC              | CHRYSENE                                      | 218-01-9   | 1.1                                   | 7.1                                    |      | 0.1                                            |
| 4  | SVOC              | DIBENZ(a,h)ANTHRACENE                         | 53-70-3    | 1.1                                   | 0.87                                   | J    | 0.1                                            |
| 4  | SVOC              | DIETHYL PHTHALATE                             | 84-66-2    | 0.25                                  | 0.18                                   | J    | 0.1                                            |
| 4  | SVOC              | Di-n-BUTYL PHTHALATE                          | 84-74-2    | 0.011                                 | 0.15                                   | J    | 0.1                                            |
| 4  | SVOC              | Di-n-OCTYLPHTHALATE                           | 117-84-0   | 0.91                                  | 0.12                                   | J    | 0.1                                            |
| 4  | SVOC              | FLUORANTHENE                                  | 206-44-0   | 1.1                                   | 14                                     |      | 0.1                                            |
| 4  | SVOC              | FLUORENE                                      | 86-73-7    | 29                                    | 0.77                                   | J    | 0.1                                            |
| 4  | SVOC              | INDENO(1,2,3-c,d)PYRENE                       | 193-39-5   | 1.1                                   | 4.1                                    |      | 0.1                                            |
| 4  | SVOC              | NAPHTHALENE                                   | 91-20-3    | 29                                    | 0.38                                   | J    | 0.1                                            |
| 4  | SVOC              | PENTACHLOROPHENOL                             | 87-86-5    | 2.1                                   | 0.3                                    |      | 0.002                                          |
| 4  | SVOC              | PHENANTHRENE                                  | 85-01-8    | 29                                    | 9.7                                    |      | 0.1                                            |
| 4  | SVOC              | PYRENE                                        | 129-00-0   | 1.1                                   | 12                                     |      | 0.1                                            |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^     | 67562-39-4 | 0.00000315                            | 0.012004                               |      | 0.1                                            |
| 4  | PEST              | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN ^^^     | 55673-89-7 | 0.00000315                            | 0.00018                                | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN ^^^        | 70648-26-9 | 0.00000315                            | 0.000401                               | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN ^^^        | 57117-44-9 | 0.00000315                            | 0.000135                               | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN ^^^        | 72918-21-9 | 0.00000315                            | 0.000012                               | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,7,8-PENTACHLORODIBENZOFURAN ^^^         | 57117-41-6 | 0.00000315                            | 0.000012                               | J    | 0.1                                            |
| 4  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN ^^^        | 60851-34-5 | 0.00000315                            | 0.000414                               | J    | 0.1                                            |
| 4  | PEST              | 2,3,4,7,8-PENTACHLORODIBENZOFURAN ^^^         | 57117-31-4 | 0.00000315                            | 0.000014                               | J    | 0.1                                            |
| 4  | PEST              | ALPHA-CHLORDANE                               | 5103-71-9  | 0.0029                                | 3.4                                    |      | 0.1                                            |
| 4  | PEST              | DDD                                           | 72-54-8    | 0.021                                 | 0.033                                  | J    | 0.0025                                         |
| 4  | PEST              | DDE                                           | 72-55-9    | 0.021                                 | 3                                      |      | 0.0025                                         |
| 4  | PEST              | DDT                                           | 50-29-3    | 0.021                                 | 13                                     |      | 0.0025                                         |
| 4  | PEST              | DIBENZOFURAN                                  | 132-64-9   | 0.15                                  | 0.44                                   |      | 0.1                                            |
| 4  | PEST              | DIELDRIN                                      | 60-57-1    | 0.0029                                | 5.6                                    | J    | 0.0005                                         |
| 4  | PEST              | GAMMA-CHLORDANE                               | 5566-34-7  | 0.02                                  | 3.3                                    |      | 0.1                                            |
| 4  | PEST              | OCTACHLORODIBENZOFURAN ^^^                    | 39001-02-0 | 0.00000315                            | 0.039746                               |      | 0.1                                            |
| 4  | PCB               | PCB-1260 (AROCLOR 1260)                       | 11096-82-5 | 0.041                                 | 18                                     | J    | 0.02                                           |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN ^^^ | 67562-39-4 | 0.00000315                            | 0.023402                               |      | 0.1                                            |
| 4  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN ^^^    | 39227-28-6 | 0.00000315                            | 0.000131                               | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN ^^^    | 57653-85-7 | 0.00000315                            | 0.001318                               | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZO-p-DIOXIN ^^^    | 19408-74-3 | 0.00000315                            | 0.000292                               | J    | 0.1                                            |
| 4  | PEST              | 1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN ^^^     | 40321-76-4 | 0.00000315                            | 0.000055                               | J    | 0.1                                            |
| 4  | OTHER             | CARBON DISULFIDE                              | 75-15-0    | 0.005                                 | 0.001                                  | J    | NA                                             |
| 4  | PEST              | OCTACHLORODIBENZO-p-DIOXIN ^^^                | 3268-87-9  | 0.00000315                            | 0.072102                               |      | 0.1                                            |
| 4  | PEST              | TCDD Equivalent ^^^                           | 1746-01-6  | 0.00000315                            | 0.000083                               |      | NA                                             |
| 4  | INORGANIC         | ALUMINUM                                      | 7429-90-5  | Narrative                             | 27600                                  |      | 50                                             |
| 4  | INORGANIC         | ANTIMONY                                      | 7440-36-0  | 0.27                                  | 27.5                                   | J    | 3.5                                            |
| 4  | INORGANIC         | ARSENIC                                       | 7440-38-2  | 18                                    | 66.3                                   |      | 10                                             |
| 4  | INORGANIC         | BARIUM                                        | 7440-39-3  | 330                                   | 366                                    |      | 165                                            |
| 4  | INORGANIC         | BERYLLIUM                                     | 7440-41-7  | 2.5                                   | 1.6                                    |      | 1.1                                            |
| 4  | INORGANIC         | CADMIUM                                       | 7440-43-9  | 0.36                                  | 4.8                                    |      | 1.6                                            |
| 4  | INORGANIC         | CHROMIUM (TOTAL)                              | 7440-47-3  | 23                                    | 4385                                   |      | 0.4                                            |
| 4  | INORGANIC         | COBALT                                        | 7440-48-4  | 13                                    | 18.9                                   |      | 20                                             |
| 4  | INORGANIC         | COPPER                                        | 7440-50-8  | 28                                    | 1400                                   |      | 40                                             |
| 4  | INORGANIC         | IRON                                          | 7439-89-6  | Narrative                             | 66100                                  |      | 200                                            |
| 4  | INORGANIC         | LEAD                                          | 7439-92-1  | 11                                    | 2800                                   |      | 50                                             |
| 4  | INORGANIC         | MANGANESE                                     | 7439-96-5  | 220                                   | 2260                                   |      | 100                                            |
| 4  | INORGANIC         | MERCURY                                       | 7439-97-6  | 0.013                                 | 0.11                                   |      | 0.1                                            |
| 4  | INORGANIC         | NICKEL                                        | 7440-02-0  | 38                                    | 43.8                                   |      | 30                                             |
| 4  | INORGANIC         | SELENIUM                                      | 7782-49-2  | 0.52                                  | 14.5                                   |      | 0.81                                           |
| 4  | INORGANIC         | SILVER                                        | 7440-22-4  | 4.2                                   | 0.63                                   | J    | 2                                              |
| 4  | INORGANIC         | THALLIUM                                      | 7440-28-0  | 0.05                                  | 6.5                                    | J    | 1                                              |
| 4  | INORGANIC         | VANADIUM                                      | 7440-62-2  | 7.8                                   | 50.9                                   |      | 2                                              |
| 4  | INORGANIC         | ZINC                                          | 7440-66-6  | 46                                    | 9915                                   | J    | 50                                             |
| 5  | VOC               | 2-HEXANONE                                    | 591-78-6   | 0.36                                  | 0.003                                  | J    | NA                                             |
| 5  | VOC               | ACETONE                                       | 67-64-1    | 1.2                                   | 0.005                                  | J    | NA                                             |
| 5  | VOC               | BENZENE                                       | 71-43-2    | 0.12                                  | 0.002                                  | J    | 0.05                                           |
| 5  | VOC               | BROMOMETHANE                                  | 74-83-9    | 0.002                                 | 0.002                                  | J    | NA                                             |
| 5  | VOC               | ETHYLBENZENE                                  | 100-41-4   | 0.27                                  | 0.002                                  | J    | 0.05                                           |
| 5  | VOC               | METHYL ETHYL KETONE                           | 78-93-3    | 1                                     | 0.076                                  |      | NA                                             |
| 5  | VOC               | METHYLENE CHLORIDE                            | 75-09-2    | 0.21                                  | 0.006                                  | J    | 0.1                                            |
| 5  | VOC               | TOLUENE                                       | 108-88-3   | 0.15                                  | 0.007                                  | J    | 0.05                                           |
| 5  | VOC               | TOTAL XYLENES                                 | 1330-20-7  | 0.1                                   | 0.009                                  | J    | NA                                             |
| 5  | SVOC              | 2-METHYLNAPHTHALENE                           | 91-57-6    | 29                                    | 0.12                                   | J    | 0.1                                            |
| 5  | SVOC              | ACENAPHTHENE                                  | 83-32-9    | 29                                    | 4.1                                    | J    | 20                                             |
| 5  | SVOC              | ANTHRACENE                                    | 120-12-7   | 29                                    | 7                                      | J    | 0.1                                            |
| 5  | SVOC              | BENZO(a)ANTHRACENE                            | 56-55-3    | 1.1                                   | 26                                     |      | 0.1                                            |

Table 1



Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Constituent                 | CASRN      | USEPA R4 Soil Screening Level (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|-----------------------------|------------|---------------------------------------|----------------------------------------|------|------------------------------------------------|
| 5  | SVOC              | BENZO(a)PYRENE              | 50-32-8    | 1.1                                   | 26                                     |      | 0.1                                            |
| 5  | SVOC              | BENZO(b)FLUORANTHENE        | 205-99-2   | 1.1                                   | 26                                     |      | 0.1                                            |
| 5  | SVOC              | BENZO(g,h,i)PERYLENE        | 191-24-2   | 1.1                                   | 18                                     |      | 0.1                                            |
| 5  | SVOC              | BENZO(k)FLUORANTHENE        | 207-08-9   | 1.1                                   | 20                                     |      | 0.1                                            |
| 5  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE | 117-81-7   | 0.02                                  | 250                                    |      | 0.1                                            |
| 5  | SVOC              | CARBAZOLE                   | 86-74-8    | 0.07                                  | 4                                      | J    | NA                                             |
| 5  | SVOC              | CHRYSENE                    | 218-01-9   | 1.1                                   | 30                                     |      | 0.1                                            |
| 5  | SVOC              | DIBENZ(a,h)ANTHRACENE       | 53-70-3    | 1.1                                   | 4                                      | J    | 0.1                                            |
| 5  | SVOC              | FLUORANTHENE                | 206-44-0   | 1.1                                   | 67                                     |      | 0.1                                            |
| 5  | SVOC              | FLUORENE                    | 86-73-7    | 29                                    | 2.6                                    | J    | 0.1                                            |
| 5  | SVOC              | INDENO(1,2,3-c,d)PYRENE     | 193-39-5   | 1.1                                   | 17                                     |      | 0.1                                            |
| 5  | SVOC              | NAPHTHALENE                 | 91-20-3    | 29                                    | 1.4                                    | J    | 0.1                                            |
| 5  | SVOC              | PENTACHLOROPHENOL           | 87-86-5    | 2.1                                   | 0.32                                   |      | 0.002                                          |
| 5  | SVOC              | PHENANTHRENE                | 85-01-8    | 29                                    | 36                                     |      | 0.1                                            |
| 5  | SVOC              | PYRENE                      | 129-00-0   | 1.1                                   | 56                                     |      | 0.1                                            |
| 5  | PEST              | ALPHA-CHLORDANE             | 5103-71-9  | 0.0029                                | 0.14                                   | J    | 0.1                                            |
| 5  | PEST              | DDD                         | 72-54-8    | 0.021                                 | 0.022                                  | J    | 0.0025                                         |
| 5  | PEST              | DDE                         | 72-55-9    | 0.021                                 | 0.077                                  |      | 0.0025                                         |
| 5  | PEST              | DDT                         | 50-29-3    | 0.021                                 | 0.26                                   |      | 0.0025                                         |
| 5  | PEST              | DIBENZOFURAN                | 132-64-9   | 0.15                                  | 1.2                                    | J    | 0.1                                            |
| 5  | PEST              | DIELDRIN                    | 60-57-1    | 0.0029                                | 1.1                                    |      | 0.0005                                         |
| 5  | PEST              | GAMMA-CHLORDANE             | 5566-34-7  | 0.02                                  | 0.15                                   | J    | 0.1                                            |
| 5  | OTHER             | CARBON DISULFIDE            | 75-15-0    | 0.005                                 | 0.037                                  |      | NA                                             |
| 5  | ORGANIC           | 4-METHYLPHENOL (p-CRESOL)   | 1319-77-3  | 0.08                                  | 0.056                                  | J    | 0.05                                           |
| 5  | INORGANIC         | ALUMINUM                    | 7429-90-5  | Narrative                             | 12200                                  |      | 50                                             |
| 5  | INORGANIC         | ANTIMONY                    | 7440-36-0  | 0.27                                  | 7.4                                    |      | 3.5                                            |
| 5  | INORGANIC         | ARSENIC                     | 7440-38-2  | 18                                    | 29                                     |      | 10                                             |
| 5  | INORGANIC         | BARIUM                      | 7440-39-3  | 330                                   | 122                                    |      | 165                                            |
| 5  | INORGANIC         | BERYLLIUM                   | 7440-41-7  | 2.5                                   | 0.56                                   | J    | 1.1                                            |
| 5  | INORGANIC         | CADMIUM                     | 7440-43-9  | 0.36                                  | 6                                      |      | 1.6                                            |
| 5  | INORGANIC         | CHROMIUM (TOTAL)            | 7440-47-3  | 23                                    | 37                                     |      | 0.4                                            |
| 5  | INORGANIC         | COBALT                      | 7440-48-4  | 13                                    | 12.4                                   |      | 20                                             |
| 5  | INORGANIC         | COPPER                      | 7440-50-8  | 28                                    | 51.6                                   |      | 40                                             |
| 5  | INORGANIC         | IRON                        | 7439-89-6  | Narrative                             | 19800                                  |      | 200                                            |
| 5  | INORGANIC         | LEAD                        | 7439-92-1  | 11                                    | 109                                    | J    | 50                                             |
| 5  | INORGANIC         | MANGANESE                   | 7439-96-5  | 220                                   | 713                                    |      | 100                                            |
| 5  | INORGANIC         | MERCURY                     | 7439-97-6  | 0.013                                 | 0.14                                   |      | 0.1                                            |
| 5  | INORGANIC         | ZINC                        | 7440-66-6  | 46                                    | 51.1                                   |      | 30                                             |
| 5  | INORGANIC         | SELENIUM                    | 7782-49-2  | 0.52                                  | 1.4                                    |      | 0.81                                           |
| 5  | INORGANIC         | SILVER                      | 7440-22-4  | 4.2                                   | 0.6                                    | J    | 2                                              |
| 5  | INORGANIC         | VANADIUM                    | 7440-62-2  | 7.8                                   | 28.1                                   |      | 2                                              |
| 5  | INORGANIC         | ZINC                        | 7440-66-6  | 46                                    | 136                                    |      | 30                                             |
| 6  | INORGANIC         | ALUMINUM                    | 7429-90-5  | Narrative                             | 13700                                  |      | 50                                             |
| 6  | INORGANIC         | ARSENIC                     | 7440-38-2  | 18                                    | 29.2                                   |      | 10                                             |
| 6  | INORGANIC         | BARIUM                      | 7440-39-3  | 330                                   | 168                                    |      | 165                                            |
| 6  | INORGANIC         | CHROMIUM (TOTAL)            | 7440-47-3  | 23                                    | 27.7                                   |      | 0.4                                            |
| 6  | INORGANIC         | COPPER                      | 7440-50-8  | 28                                    | 50.7                                   |      | 40                                             |
| 6  | INORGANIC         | IRON                        | 7439-89-6  | Narrative                             | 24700                                  |      | 200                                            |
| 6  | INORGANIC         | LEAD                        | 7439-92-1  | 11                                    | 136                                    |      | 50                                             |
| 6  | INORGANIC         | MANGANESE                   | 7439-96-5  | 220                                   | 601                                    |      | 100                                            |
| 6  | INORGANIC         | NICKEL                      | 7440-02-0  | 38                                    | 41.1                                   |      | 30                                             |
| 6  | INORGANIC         | SELENIUM                    | 7782-49-2  | 0.52                                  | 0.89                                   |      | 0.81                                           |
| 6  | INORGANIC         | VANADIUM                    | 7440-62-2  | 7.8                                   | 32                                     |      | 2                                              |
| 6  | INORGANIC         | ZINC                        | 7440-66-6  | 46                                    | 541                                    |      | 50                                             |
| 6  | OTHER             | CARBON DISULFIDE            | 75-15-0    | 0.005                                 | 0.008                                  |      | NA                                             |
| 6  | PCB               | PCB-1260 (AROCLOR 1260)     | 11096-82-5 | 0.041                                 | 1.4                                    |      | 0.02                                           |
| 6  | PEST              | ALPHA-CHLORDANE             | 5103-71-9  | 0.0029                                | 1.2                                    |      | 0.1                                            |
| 6  | PEST              | DDD                         | 72-54-8    | 0.021                                 | 0.13                                   |      | 0.0025                                         |
| 6  | PEST              | DDE                         | 72-55-9    | 0.021                                 | 2.3                                    |      | 0.0025                                         |
| 6  | PEST              | DDT                         | 50-29-3    | 0.021                                 | 3.5                                    |      | 0.0025                                         |
| 6  | PEST              | DIELDRIN                    | 60-57-1    | 0.0029                                | 5.5                                    |      | 0.0005                                         |
| 6  | PEST              | GAMMA-CHLORDANE             | 5566-34-7  | 0.02                                  | 1.1                                    |      | 0.1                                            |
| 6  | SVOC              | BENZO(a)ANTHRACENE          | 56-55-3    | 1.1                                   | 5.4                                    |      | 0.1                                            |
| 6  | SVOC              | BENZO(a)PYRENE              | 50-32-8    | 1.1                                   | 6.3                                    |      | 0.1                                            |
| 6  | SVOC              | BENZO(b)FLUORANTHENE        | 205-99-2   | 1.1                                   | 8.1                                    |      | 0.1                                            |
| 6  | SVOC              | BENZO(g,h,i)PERYLENE        | 191-24-2   | 1.1                                   | 6.8                                    |      | 0.1                                            |
| 6  | SVOC              | BENZO(k)FLUORANTHENE        | 207-08-9   | 1.1                                   | 7.4                                    |      | 0.1                                            |
| 6  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE | 117-81-7   | 0.02                                  | 0.14                                   |      | 0.1                                            |
| 6  | SVOC              | CARBAZOLE                   | 86-74-8    | 0.07                                  | 1.5                                    |      | NA                                             |
| 6  | SVOC              | CHRYSENE                    | 218-01-9   | 1.1                                   | 9.2                                    |      | 0.1                                            |

Table 1



Comparison of Surface Soil (0-2 ft) Analytical Results to Ecological Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Constituent               | CASRN     | USEPA R4 Soil Screening Level (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|---------------------------|-----------|---------------------------------------|----------------------------------------|------|------------------------------------------------|
| 6  | SVOC              | FLUORANTHENE              | 206-44-0  | 1.1                                   | 14                                     |      | 0.1                                            |
| 6  | SVOC              | INDENO(1,2,3-c,d)PYRENE   | SVOC      | 1.1                                   | 6.2                                    |      | 0.1                                            |
| 6  | SVOC              | PHENANTHRENE              | 85-01-8   | 29                                    | 6                                      |      | 0.1                                            |
| 6  | SVOC              | PYRENE                    | 129-00-0  | 1.1                                   | 12                                     |      | 0.1                                            |
| 6  | VOC               | 2-HEXANONE                | 591-78-6  | 0.36                                  | 0.004                                  |      | NA                                             |
| 6  | VOC               | ACETONE                   | 67-64-1   | 1.2                                   | 0.033                                  |      | NA                                             |
| 6  | VOC               | BROMOMETHANE              | 74-83-9   | 0.002                                 | 0.004                                  |      | NA                                             |
| 6  | VOC               | CHLOROFORM                | 67-66-3   | 0.05                                  | 0.005                                  |      | 0.001                                          |
| 6  | VOC               | METHYL ETHYL KETONE       | 78-93-3   | 1                                     | 0.034                                  |      | NA                                             |
| 6  | VOC               | METHYL ISOBUTYL KETONE    | 108-10-1  | NA                                    | 0.006                                  |      | NA                                             |
| 6  | VOC               | TETRACHLOROETHYLENE (PCE) | 127-18-4  | 0.06                                  | 0.013                                  |      | 0.01                                           |
| 6  | VOC               | TOTAL XYLENES             | 1330-20-7 | 0.1                                   | 0.003                                  |      | 0.05                                           |
| 6  | VOC               | TRICHLOROETHYLENE (TCE)   | 79-01-6   | 0.06                                  | 0.002                                  |      | 0.001                                          |

**Notes:**

Maximum detected concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables and compared to the current USEPA Region 4 Ecological Screening Values to determine if exceedances have changed.

Exceedances of the ecological screening values are highlighted and bold.

The original criteria applied in the 2000 SLERA are from the memorandum "Ecological Risk Assessment at Military Bases: Process Consideration, Timing of Activities and Inclusion of Stakeholders" from USEPA Region 4 (December 22, 1998).

**Abbreviations:**

\* -- Criteria for total polycyclic aromatic hydrocarbons (PAHs), 0.29 mg/kg for low-molecular weight and 1.1 mg/kg for high-molecular weight PAHs.

^^ -- Criteria for dioxins/furans

FU -- Functional Unit

J -- Estimated concentration

NA -- Not available

**References:**

USEPA Region 4. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. March. Available online: <https://www.epa.gov/risk/regional-ecological-risk-assessment-era-supplemental-guidance>

Table 2

Comparison of Sediment Analytical Results to Ecological Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                                     | CASRN      | EPA R4 Freshwater Sediment Screening Value Narcotic Mode (mg/kg) | EPA R4 Freshwater Sediment Screening Value Non-Narcotic Mode (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|-------------------------------------------------|------------|------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------|------|------------------------------------------------|
| 2  | VOC               | ACETONE                                         | 67-64-1    | 0.065                                                            | NA                                                                   | 0.023                                  |      | NA                                             |
| 2  | VOC               | BENZENE                                         | 71-43-2    | 0.01                                                             | NA                                                                   | 0.004                                  | J    | NA                                             |
| 2  | VOC               | CARBON TETRACHLORIDE                            | 56-23-5    | 0.057                                                            | NA                                                                   | 0.11                                   |      | NA                                             |
| 2  | VOC               | METHYL ETHYL KETONE                             | 78-93-3    | 7.604                                                            | NA                                                                   | 0.12                                   | J    | NA                                             |
| 2  | VOC               | METHYLENE CHLORIDE                              | 75-09-2    | 0.018                                                            | NA                                                                   | 0.015                                  |      | NA                                             |
| 2  | SVOC              | 2-METHYLNAPHTHALENE*                            | 91-57-6    | 0.0202                                                           | NA                                                                   | 0.086                                  | J    | 0.33                                           |
| 2  | SVOC              | ACENAPHTHENE*                                   | 83-32-9    | 0.0067                                                           | NA                                                                   | 0.26                                   | J    | 0.33                                           |
| 2  | SVOC              | ACENAPHTHYLENE*                                 | 208-96-8   | 0.0059                                                           | NA                                                                   | 0.066                                  | J    | 0.33                                           |
| 2  | SVOC              | ANTHRACENE*                                     | 120-12-7   | 0.057                                                            | NA                                                                   | 0.62                                   | J    | 0.33                                           |
| 2  | SVOC              | BENZO(a)ANTHRACENE*                             | 56-55-3    | 0.108                                                            | NA                                                                   | 3.8                                    |      | 0.33                                           |
| 2  | SVOC              | BENZO(a)PYRENE*                                 | 50-32-8    | 0.15                                                             | NA                                                                   | 4.1                                    |      | 0.33                                           |
| 2  | SVOC              | BENZO(b)FLUORANTHENE*                           | 205-99-2   | 0.19                                                             | NA                                                                   | 4.9                                    |      | 0.33                                           |
| 2  | SVOC              | BENZO(g,h,i)PERYLENE*                           | 191-24-2   | 0.17                                                             | NA                                                                   | 3                                      |      | 0.33                                           |
| 2  | SVOC              | BENZO(k)FLUORANTHENE*                           | 207-08-9   | 0.24                                                             | NA                                                                   | 4.6                                    |      | 0.33                                           |
| 2  | SVOC              | BENZYL BUTYL PHTHALATE                          | 85-68-7    | 0.1                                                              | NA                                                                   | 0.084                                  | J    | NA                                             |
| 2  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE                     | 117-81-7   | 0.18                                                             | NA                                                                   | 1.5                                    |      | 0.182                                          |
| 2  | SVOC              | CARBAZOLE                                       | 86-74-8    | 0.069                                                            | NA                                                                   | 0.66                                   | J    | NA                                             |
| 2  | SVOC              | CHRYSENE*                                       | 218-01-9   | 0.166                                                            | NA                                                                   | 4.6                                    |      | 0.33                                           |
| 2  | SVOC              | DIBENZ(a,h)ANTHRACENE*                          | 53-70-3    | 0.033                                                            | NA                                                                   | 0.48                                   | J    | 0.33                                           |
| 2  | SVOC              | DIETHYL PHTHALATE                               | 84-66-2    | 0.63                                                             | NA                                                                   | 0.52                                   | J    | NA                                             |
| 2  | SVOC              | DIMETHYL PHTHALATE                              | 131-11-3   | 0.678                                                            | NA                                                                   | 0.11                                   | J    | NA                                             |
| 2  | SVOC              | DI-N-BUTYL PHTHALATE                            | 84-74-2    | 0.011                                                            | NA                                                                   | 0.045                                  | J    | NA                                             |
| 2  | SVOC              | DI-N-OCTYLPHTHALATE                             | 117-84-0   | 0.039                                                            | NA                                                                   | 0.09                                   | J    | NA                                             |
| 2  | SVOC              | FLUORANTHENE*                                   | 206-44-0   | 0.423                                                            | NA                                                                   | 9.9                                    |      | 0.33                                           |
| 2  | SVOC              | FLUORENE*                                       | 86-73-7    | 0.077                                                            | NA                                                                   | 0.33                                   | J    | 0.33                                           |
| 2  | SVOC              | INDENO(1,2,3-c,d)PYRENE*                        | 193-39-5   | 0.2                                                              | NA                                                                   | 3.2                                    |      | 0.33                                           |
| 2  | SVOC              | NAPHTHALENE*                                    | 91-20-3    | 0.176                                                            | NA                                                                   | 0.081                                  | J    | 0.33                                           |
| 2  | SVOC              | PENTACHLOROPHENOL                               | 87-86-5    | NA                                                               | 0.01                                                                 | 0.14                                   | J    | NA                                             |
| 2  | SVOC              | PHENANTHRENE*                                   | 85-01-8    | 0.204                                                            | NA                                                                   | 4.7                                    |      | 0.33                                           |
| 2  | SVOC              | PYRENE*                                         | 129-00-0   | 0.195                                                            | NA                                                                   | 9.3                                    |      | 0.33                                           |
| 2  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ***       | 67562-39-4 | NA                                                               | 0.0000025                                                            | 0.000556                               |      | NA                                             |
| 2  | PEST              | ALDRIN                                          | 309-00-2   | NA                                                               | 0.029                                                                | 0.014                                  | J    | NA                                             |
| 2  | PEST              | ALPHA ENDOSULFAN                                | 959-98-8   | NA                                                               | NA                                                                   | 0.0081                                 | J    | NA                                             |
| 2  | PEST              | ALPHA-CHLORDANE **                              | 5103-71-9  | NA                                                               | 0.0032                                                               | 0.034                                  |      | 0.0017                                         |
| 2  | PEST              | DDD                                             | 72-54-8    | NA                                                               | 0.0035                                                               | 0.4                                    | J    | 0.0033                                         |
| 2  | PEST              | DDE                                             | 72-55-9    | NA                                                               | 0.0014                                                               | 0.79                                   |      | 0.0033                                         |
| 2  | PEST              | DDT                                             | 50-29-3    | NA                                                               | 0.0042                                                               | 0.093                                  | J    | 0.0033                                         |
| 2  | PEST              | DIBENZOFURAN ***                                | 132-64-9   | 0.51                                                             | 0.0000025                                                            | 0.14                                   | J    | NA                                             |
| 2  | PEST              | DIELDRIN                                        | 60-57-1    | NA                                                               | 0.0019                                                               | 0.16                                   |      | 0.0033                                         |
| 2  | PEST              | ENDRIN                                          | 72-20-8    | NA                                                               | 0.0022                                                               | 0.026                                  | J    | 0.0033                                         |
| 2  | PEST              | ENDRIN ALDEHYDE                                 | 7421-93-4  | NA                                                               | NA                                                                   | 0.019                                  | J    | NA                                             |
| 2  | PEST              | GAMMA-CHLORDANE **                              | 5566-34-7  | NA                                                               | 0.0032                                                               | 0.054                                  |      | 0.0017                                         |
| 2  | PEST              | HEPTACHLOR                                      | 76-44-8    | NA                                                               | 0.0006                                                               | 0.002                                  | J    | NA                                             |
| 2  | PEST              | HEPTACHLOR EPOXIDE                              | 1024-57-3  | NA                                                               | 0.0025                                                               | 0.0037                                 | J    | NA                                             |
| 2  | PEST              | HEPTACHLORINATED DIBENZOFURANS, (TOTAL) ***     | 38998-75-3 | NA                                                               | 0.0000025                                                            | 0.00198                                |      | NA                                             |
| 2  | PEST              | HEXACHLORINATED DIBENZOFURANS, (TOTAL) ***      | HxCDF      | NA                                                               | 0.0000025                                                            | 0.000598                               |      | NA                                             |
| 2  | PEST              | OCTACHLORODIBENZOFURAN ***                      | 39001-02-0 | NA                                                               | 0.0000025                                                            | 0.0024                                 | J    | NA                                             |
| 2  | PEST              | PENTACHLORINATED DIBENZOFURANS, (TOTAL) ***     | PeCDF      | NA                                                               | 0.0000025                                                            | 0.000106                               |      | NA                                             |
| 2  | PEST              | TETRACHLORINATED DIBENZOFURANS, (TOTAL) ***     | TCDF       | NA                                                               | 0.0000025                                                            | 0.0000123                              |      | NA                                             |
| 2  | PCB               | PCB-1260 (AROCOR 1260) ^                        | 11096-82-5 | NA                                                               | 0.0598                                                               | 0.33                                   |      | 0.033                                          |
| 2  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN ***   | 35822-46-9 | NA                                                               | 0.0000025                                                            | 0.00644                                |      | NA                                             |
| 2  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN ***      | 57653-85-7 | NA                                                               | 0.0000025                                                            | 0.0000929                              | J    | NA                                             |
| 2  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZO-p-DIOXIN ***      | 19408-74-3 | NA                                                               | 0.0000025                                                            | 0.000146                               | J    | NA                                             |
| 2  | OTHER             | CARBON DISULFIDE                                | 75-15-0    | 0.0078                                                           | NA                                                                   | 0.032                                  | J    | NA                                             |
| 2  | PEST              | HEPTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) *** | HpCDD      | NA                                                               | 0.0000025                                                            | 0.0126                                 |      | NA                                             |
| 2  | PEST              | HEXACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) ***  | HxCDD      | NA                                                               | 0.0000025                                                            | 0.00103                                |      | NA                                             |
| 2  | PEST              | OCTACHLORODIBENZO-p-DIOXIN ***                  | 3268-87-9  | NA                                                               | 0.0000025                                                            | 0.00616                                |      | NA                                             |
| 2  | PEST              | PENTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) *** | PeCDD      | NA                                                               | 0.0000025                                                            | 0.0000128                              |      | NA                                             |
| 2  | PEST              | TCDD Equivalent                                 | 1746-01-6  | NA                                                               | 0.0000025                                                            | 0.0000635                              |      | NA                                             |
| 2  | INORGANIC         | ALUMINUM                                        | 7429-90-5  | NA                                                               | 25000                                                                | 17100                                  |      | NA                                             |
| 2  | INORGANIC         | ANTIMONY                                        | 7440-36-0  | NA                                                               | 2                                                                    | 6.4                                    | J    | 12                                             |
| 2  | INORGANIC         | ARSENIC                                         | 7440-38-2  | NA                                                               | 9.8                                                                  | 14                                     |      | 7.24                                           |
| 2  | INORGANIC         | BARIUM                                          | 7440-39-3  | NA                                                               | 20                                                                   | 145                                    |      | NA                                             |
| 2  | INORGANIC         | BERYLLIUM                                       | 7440-41-7  | NA                                                               | NA                                                                   | 1.2                                    | J    | NA                                             |
| 2  | INORGANIC         | CADMIUM                                         | 7440-43-9  | NA                                                               | 1                                                                    | 2.4                                    |      | 1                                              |
| 2  | INORGANIC         | CHROMIUM (TOTAL)                                | 7440-47-3  | NA                                                               | 43.4                                                                 | 36.5                                   |      | 52.3                                           |
| 2  | INORGANIC         | COBALT                                          | 7440-48-4  | NA                                                               | 50                                                                   | 219                                    |      | NA                                             |
| 2  | INORGANIC         | COPPER                                          | 7440-50-8  | NA                                                               | 31.6                                                                 | 49.4                                   |      | 18.7                                           |
| 2  | INORGANIC         | CYANIDE                                         | 57-12-5    | NA                                                               | NA                                                                   | 0.34                                   | J    | NA                                             |
| 2  | INORGANIC         | IRON                                            | 7439-89-6  | NA                                                               | 20000                                                                | 19200                                  |      | NA                                             |
| 2  | INORGANIC         | LEAD                                            | 7439-92-1  | NA                                                               | 35.8                                                                 | 169                                    |      | 30.2                                           |
| 2  | INORGANIC         | MANGANESE                                       | 7439-96-5  | NA                                                               | 460                                                                  | 597                                    | J    | NA                                             |
| 2  | INORGANIC         | MERCURY                                         | 7439-97-6  | NA                                                               | 0.18                                                                 | 0.53                                   |      | 0.13                                           |
| 2  | INORGANIC         | NICKEL                                          | 7440-02-0  | NA                                                               | 22.7                                                                 | 26.2                                   |      | 15.9                                           |
| 2  | INORGANIC         | SELENIUM                                        | 7782-49-2  | NA                                                               | 0.72                                                                 | 3.8                                    |      | NA                                             |
| 2  | INORGANIC         | SILVER                                          | 7440-22-4  | NA                                                               | 1                                                                    | 9.1                                    |      | 2                                              |
| 2  | INORGANIC         | VANADIUM                                        | 7440-62-2  | NA                                                               | NA                                                                   | 38.9                                   |      | NA                                             |
| 2  | INORGANIC         | ZINC                                            | 7440-66-6  | NA                                                               | 121                                                                  | 1170                                   |      | 124                                            |
| 4  | VOC               | CARBON TETRACHLORIDE                            | 56-23-5    | 0.057                                                            | NA                                                                   | 0.078                                  |      | NA                                             |
| 4  | VOC               | METHYL ETHYL KETONE                             | 78-93-3    | 7.604                                                            | NA                                                                   | 0.014                                  | J    | NA                                             |
| 4  | VOC               | METHYLENE CHLORIDE                              | 75-09-2    | 0.018                                                            | NA                                                                   | 0.045                                  |      | NA                                             |
| 4  | VOC               | TOTAL XYLENES                                   | 1330-20-7  | 0.13                                                             | NA                                                                   | 0.036                                  | J    | NA                                             |
| 4  | SVOC              | 2-METHYLNAPHTHALENE*                            | 91-57-6    | 0.0202                                                           | NA                                                                   | 10                                     | J    | 0.33                                           |

Table 2  
Comparison of Sediment Analytical Results to Ecological Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                                     | CASRN      | EPA R4 Freshwater Sediment Screening Value Narcotic Mode (mg/kg) | EPA R4 Freshwater Sediment Screening Value Non-Narcotic Mode (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual | Original Criteria Applied in the SLERA (mg/kg) |
|----|-------------------|-------------------------------------------------|------------|------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------|------|------------------------------------------------|
| 4  | SVOC              | 4-METHYLPHENOL (p-CRESOL)                       | 106-44-5   | NA                                                               | 0.093                                                                | 0.17                                   | J    | NA                                             |
| 4  | SVOC              | ACENAPHTHENE*                                   | 83-32-9    | 0.0067                                                           | NA                                                                   | 0.061                                  | J    | 0.33                                           |
| 4  | SVOC              | ACENAPHTHYLENE*                                 | 208-96-8   | 0.0059                                                           | NA                                                                   | 0.038                                  | J    | 0.33                                           |
| 4  | SVOC              | ANTHRACENE*                                     | 120-12-7   | 0.057                                                            | NA                                                                   | 6.9                                    | J    | 0.33                                           |
| 4  | SVOC              | BENZO(a)ANTHRACENE*                             | 56-55-3    | 0.108                                                            | NA                                                                   | 20                                     | J    | 0.33                                           |
| 4  | SVOC              | BENZO(a)PYRENE*                                 | 50-32-8    | 0.15                                                             | NA                                                                   | 19                                     | J    | 0.33                                           |
| 4  | SVOC              | BENZO(b)FLUORANTHENE*                           | 205-99-2   | 0.19                                                             | NA                                                                   | 26                                     | J    | 0.33                                           |
| 4  | SVOC              | BENZO(g,h,i)PERYLENE*                           | 191-24-2   | 0.17                                                             | NA                                                                   | 9.5                                    | J    | 0.33                                           |
| 4  | SVOC              | BENZO(k)FLUORANTHENE*                           | 207-08-9   | 0.24                                                             | NA                                                                   | 25                                     | J    | 0.33                                           |
| 4  | SVOC              | bis(2-ETHYLHEXYL) PHTHALATE                     | 117-81-7   | 0.18                                                             | NA                                                                   | 1.5                                    | J    | 0.182                                          |
| 4  | SVOC              | CARBAZOLE                                       | 86-74-8    | 0.069                                                            | NA                                                                   | 2.4                                    | J    | NA                                             |
| 4  | SVOC              | CHRYSENE*                                       | 218-01-9   | 0.166                                                            | NA                                                                   | 30                                     | J    | 0.33                                           |
| 4  | SVOC              | DIBENZ(a,h)ANTHRACENE*                          | 53-70-3    | 0.033                                                            | NA                                                                   | 0.09                                   | J    | 0.33                                           |
| 4  | SVOC              | DIETHYL PHTHALATE                               | 84-66-2    | 0.63                                                             | NA                                                                   | 7.7                                    | J    | NA                                             |
| 4  | SVOC              | DI-N-BUTYL PHTHALATE                            | 84-74-2    | 0.011                                                            | NA                                                                   | 0.034                                  | J    | NA                                             |
| 4  | SVOC              | FLUORANTHENE*                                   | 206-44-0   | 0.423                                                            | NA                                                                   | 32                                     | J    | 0.33                                           |
| 4  | SVOC              | FLUORENE*                                       | 86-73-7    | 0.077                                                            | NA                                                                   | 7.2                                    | J    | 0.33                                           |
| 4  | SVOC              | INDENO(1,2,3-c,d)PYRENE*                        | 193-39-5   | 0.2                                                              | NA                                                                   | 9.1                                    | J    | 0.33                                           |
| 4  | SVOC              | PENTACHLOROPHENOL                               | 87-86-5    | NA                                                               | 0.01                                                                 | 0.26                                   | J    | NA                                             |
| 4  | SVOC              | PHENANTHRENE*                                   | 85-01-8    | 0.204                                                            | NA                                                                   | 33                                     | J    | 0.33                                           |
| 4  | SVOC              | PYRENE*                                         | 129-00-0   | 0.195                                                            | NA                                                                   | 55                                     | J    | 0.33                                           |
| 4  | PEST              | ALPHA ENDOSULFAN                                | 959-98-8   | NA                                                               | NA                                                                   | 0.032                                  | J    | NA                                             |
| 4  | PEST              | ALPHA-CHLORDANE ^^                              | 5103-71-9  | NA                                                               | 0.0032                                                               | 0.53                                   | J    | 0.0017                                         |
| 4  | PEST              | DDD                                             | 72-54-8    | NA                                                               | 0.0035                                                               | 0.99                                   | J    | 0.0033                                         |
| 4  | PEST              | DDE                                             | 72-55-9    | NA                                                               | 0.0014                                                               | 0.25                                   | J    | 0.0033                                         |
| 4  | PEST              | DDT                                             | 50-29-3    | NA                                                               | 0.0042                                                               | 0.27                                   | J    | 0.0033                                         |
| 4  | PEST              | DIELDRIN                                        | 60-57-1    | NA                                                               | 0.0019                                                               | 0.31                                   | J    | 0.0033                                         |
| 4  | PEST              | ENDRIN                                          | 72-20-8    | NA                                                               | 0.0022                                                               | 0.048                                  | J    | 0.0033                                         |
| 4  | PEST              | ENDRIN ALDEHYDE                                 | 7421-93-4  | NA                                                               | NA                                                                   | 0.043                                  | J    | NA                                             |
| 4  | PEST              | GAMMA-CHLORDANE ^^                              | 5566-34-7  | NA                                                               | 0.0032                                                               | 0.65                                   | J    | 0.0017                                         |
| 4  | PEST              | HEPTACHLORINATED DIBENZOFURANS, (TOTAL) ^^^     | 38998-75-3 | NA                                                               | 0.0000025                                                            | 0.0043                                 | J    | NA                                             |
| 4  | PEST              | OCTACHLORODIBENZOFURAN ^^^                      | 39001-02-0 | NA                                                               | 0.0000025                                                            | 0.014863                               | J    | NA                                             |
| 4  | PEST              | HEPTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) ^^^ | HpCDD      | NA                                                               | 0.0000025                                                            | 0.0093                                 | J    | NA                                             |
| 4  | PEST              | OCTACHLORODIBENZO-p-DIOXIN ^^^                  | 3268-87-9  | NA                                                               | 0.0000025                                                            | 0.114256                               | J    | NA                                             |
| 4  | PEST              | TCDD Equivalent                                 | 1746-01-6  | NA                                                               | 0.0000025                                                            | 0.0001291                              | J    | NA                                             |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^       | 67562-39-4 | NA                                                               | 0.0000025                                                            | 0.006989                               | J    | NA                                             |
| 4  | PEST              | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN ^^^       | 55673-89-7 | NA                                                               | 0.0000025                                                            | 0.00011                                | J    | NA                                             |
| 4  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN ^^^          | 70648-26-9 | NA                                                               | 0.0000025                                                            | 0.000074                               | J    | NA                                             |
| 4  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN ^^^          | 57117-44-9 | NA                                                               | 0.0000025                                                            | 0.000079                               | J    | NA                                             |
| 4  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN ^^^          | 60851-34-5 | NA                                                               | 0.0000025                                                            | 0.000022                               | J    | NA                                             |
| 4  | OTHER             | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN ^^^   | 67562-39-4 | NA                                                               | 0.0000025                                                            | 0.0238                                 | J    | NA                                             |
| 4  | OTHER             | 1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN ^^^      | 39227-28-6 | NA                                                               | 0.0000025                                                            | 0.000014                               | J    | NA                                             |
| 4  | OTHER             | 1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN ^^^      | 57653-85-7 | NA                                                               | 0.0000025                                                            | 0.00026                                | J    | NA                                             |
| 4  | OTHER             | 1,2,3,7,8,9-HEXACHLORODIBENZO-p-DIOXIN ^^^      | 19408-74-3 | NA                                                               | 0.0000025                                                            | 0.00015                                | J    | NA                                             |
| 4  | INORGANIC         | ALUMINUM                                        | 7429-90-5  | NA                                                               | 25000                                                                | 3450                                   | J    | NA                                             |
| 4  | INORGANIC         | ANTIMONY                                        | 7440-36-0  | NA                                                               | 2                                                                    | 1.4                                    | J    | 12                                             |
| 4  | INORGANIC         | ARSENIC                                         | 7440-38-2  | NA                                                               | 9.8                                                                  | 10.1                                   | J    | 7.24                                           |
| 4  | INORGANIC         | BARIUM                                          | 7440-39-3  | NA                                                               | 20                                                                   | 78.6                                   | J    | NA                                             |
| 4  | INORGANIC         | BERYLLIUM                                       | 7440-41-7  | NA                                                               | NA                                                                   | 0.35                                   | J    | NA                                             |
| 4  | INORGANIC         | CADMIUM                                         | 7440-43-9  | NA                                                               | 1                                                                    | 3                                      | J    | 1                                              |
| 4  | INORGANIC         | CHROMIUM (TOTAL)                                | 7440-47-3  | NA                                                               | 43.4                                                                 | 68.5                                   | J    | 52.3                                           |
| 4  | INORGANIC         | COBALT                                          | 7440-48-4  | NA                                                               | 50                                                                   | 10.8                                   | J    | NA                                             |
| 4  | INORGANIC         | COPPER                                          | 7440-50-8  | NA                                                               | 31.6                                                                 | 56.5                                   | J    | 18.7                                           |
| 4  | INORGANIC         | CYANIDE                                         | 57-12-5    | NA                                                               | NA                                                                   | 0.7                                    | J    | NA                                             |
| 4  | INORGANIC         | IRON                                            | 7439-89-6  | NA                                                               | 20000                                                                | 12200                                  | J    | NA                                             |
| 4  | INORGANIC         | LEAD                                            | 7439-92-1  | NA                                                               | 35.8                                                                 | 484                                    | J    | 30.2                                           |
| 4  | INORGANIC         | MANGANESE                                       | 7439-96-5  | NA                                                               | 460                                                                  | 341                                    | J    | NA                                             |
| 4  | INORGANIC         | MERCURY                                         | 7439-97-6  | NA                                                               | 0.18                                                                 | 0.12                                   | J    | 0.13                                           |
| 4  | INORGANIC         | NICKEL                                          | 7440-02-0  | NA                                                               | 22.7                                                                 | 19.1                                   | J    | 15.9                                           |
| 4  | INORGANIC         | SELENIUM                                        | 7782-49-2  | NA                                                               | 0.72                                                                 | 1.1                                    | J    | NA                                             |
| 4  | INORGANIC         | VANADIUM                                        | 7440-62-2  | NA                                                               | NA                                                                   | 17.5                                   | J    | NA                                             |
| 4  | INORGANIC         | ZINC                                            | 7440-66-6  | NA                                                               | 121                                                                  | 288                                    | J    | 124                                            |

#### Notes:

Maximum detected concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables and compared to the current USEPA Region 4 Ecological Screening Values to determine if exceedances have changed.

Exceedances of the Narcotic Mode values are highlighted and bold and exceedances of the Non-Narcotic Mode values are highlighted and underlined.

The original criteria applied in the 2000 SLERA are from the memorandum "Ecological Risk Assessment at Military Bases: Process Consideration, Timing of Activities and Inclusion of Stakeholders" from USEPA Region 4 (December 22, 1998).

#### Abbreviations:

\* -- Criteria for total polycyclic aromatic hydrocarbons (PAHs)

^ -- Criteria for total polychlorinated biphenyls (PCBs)

^^ -- Criteria for chlordane

^^^ -- Criteria for dioxins/furans

FU -- Functional Unit

J -- Estimated concentration

NA -- Not available

#### References:

USEPA Region 4. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. March. Available online: <https://www.epa.gov/risk/regional-ecological-risk-assessment-era-supplemental-guidance>



Table 3

Comparison of Surface Water Analytical Results to Ecological Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                               | CASRN      | EPA R4 Freshwater Surface Water Screening Value Acute (mg/L) | EPA R4 Freshwater Surface Water Screening Value Chronic (mg/L) | Maximum Detected Concentration (mg/L) | Qual | Original Criteria Applied in the SLERA (mg/L) |
|----|-------------------|-------------------------------------------|------------|--------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------|------|-----------------------------------------------|
| 2  | SVOC              | BIS(2-ETHYLHEXYL) PHTHALATE               | 117-81-7   | 1.1                                                          | 0.008                                                          | 0.001                                 | J    | 0.0003                                        |
| 2  | PEST              | DDE                                       | 72-55-9    | 0.0013                                                       | 0.0003                                                         | 0.000058                              | J    | 0.0105                                        |
| 2  | PEST              | DDT                                       | 50-29-3    | 0.0011                                                       | 0.000001                                                       | <b>0.00015</b>                        |      | 0.000001                                      |
| 2  | PEST              | DIELDRIN                                  | 60-57-1    | 0.00024                                                      | 0.00006                                                        | <b>0.00043</b>                        |      | 0.0000019                                     |
| 2  | INORGANIC         | ALUMINUM                                  | 7429-90-5  | 0.75                                                         | 0.087                                                          | <b>0.576</b>                          |      | 0.087                                         |
| 2  | INORGANIC         | ALUMINUM, DISSOLVED                       | 7429-90-5  | NA                                                           | NA                                                             | 0.0814                                | J    | 0.087                                         |
| 2  | INORGANIC         | ARSENIC #                                 | 7440-38-2  | 0.34                                                         | 0.148                                                          | 0.0774                                |      | 0.19                                          |
| 2  | INORGANIC         | ARSENIC, DISSOLVED #                      | 7440-38-2  | NA                                                           | NA                                                             | 0.0405                                |      | 0.19                                          |
| 2  | INORGANIC         | BARIUM                                    | 7440-39-3  | 2                                                            | 0.22                                                           | 0.0177                                | J    | NA                                            |
| 2  | INORGANIC         | CHROMIUM (TOTAL) **                       | 7440-47-3  | 1.803                                                        | 0.086                                                          | 0.0186                                |      | 0.011                                         |
| 2  | INORGANIC         | COPPER #                                  | 7440-50-8  | 0.014                                                        | 0.0093                                                         | <b>0.0216</b>                         | J    | 0.00654                                       |
| 2  | INORGANIC         | IRON                                      | 7439-89-6  | NA                                                           | 1                                                              | 0.835                                 |      | 1                                             |
| 2  | INORGANIC         | IRON, DISSOLVED                           | 7439-89-6  | NA                                                           | NA                                                             | 0.253                                 |      | 1                                             |
| 2  | INORGANIC         | LEAD #                                    | 7439-92-1  | 0.082                                                        | 0.0032                                                         | <b>0.0594</b>                         |      | 0.00132                                       |
| 2  | INORGANIC         | LEAD, DISSOLVED #                         | 7439-92-1  | 0.0301                                                       | 0.00125                                                        | <b>0.0313</b>                         |      | 0.00132                                       |
| 2  | INORGANIC         | MANGANESE                                 | 7439-96-5  | 1.68                                                         | 0.093                                                          | 0.0698                                |      | NA                                            |
| 2  | INORGANIC         | MANGANESE, DISSOLVED                      | 7439-96-5  | NA                                                           | NA                                                             | 0.0207                                |      | NA                                            |
| 2  | INORGANIC         | MERCURY #                                 | 7439-97-6  | 0.0014                                                       | 0.00077                                                        | 0.00009                               | J    | 0.000012                                      |
| 2  | INORGANIC         | NICKEL #                                  | 7440-02-0  | 0.469                                                        | 0.052                                                          | 0.0175                                | J    | 0.08771                                       |
| 2  | INORGANIC         | SELENIUM #                                | 7782-49-2  | 0.02                                                         | 0.005                                                          | <b>0.0058</b>                         |      | 0.005                                         |
| 2  | INORGANIC         | VANADIUM                                  | 7440-62-2  | 0.079                                                        | 0.027                                                          | 0.0043                                | J    | NA                                            |
| 2  | INORGANIC         | ZINC #                                    | 7440-66-6  | 0.12                                                         | 0.12                                                           | <b>0.467</b>                          | J    | 0.05891                                       |
| 2  | INORGANIC         | ZINC, DISSOLVED #                         | 7440-66-6  | 0.066                                                        | 0.066                                                          | <b>0.406</b>                          | J    | 0.05891                                       |
| 4  | SVOC              | BIS(2-ETHYLHEXYL) PHTHALATE               | 117-81-7   | 1.1                                                          | 0.008                                                          | 0.019                                 |      | 0.0003                                        |
| 4  | SVOC              | PENTACHLOROPHENOL                         | 87-86-5    | 0.019                                                        | 0.015                                                          | 0.013                                 |      | 0.013                                         |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^ | 67562-39-4 | NA                                                           | 3.1E-12                                                        | 0.0000007                             | J    | NA                                            |
| 4  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN ^^^    | 72918-21-9 | NA                                                           | 3.1E-12                                                        | 0.0000003                             | J    | NA                                            |
| 4  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN ^^^    | 60851-34-5 | NA                                                           | 3.1E-12                                                        | 0.00000051                            | J    | NA                                            |
| 4  | PEST              | DDT                                       | 50-29-3    | 0.0011                                                       | 0.000001                                                       | 0.00022                               |      | 0.000001                                      |
| 4  | PEST              | DIELDRIN                                  | 60-57-1    | 0.00024                                                      | 0.00006                                                        | 0.00024                               |      | 0.0000019                                     |
| 4  | PEST              | OCTACHLORODIBENZOFURAN ^^^                | 39001-02-0 | NA                                                           | 3.1E-12                                                        | 1.30E-06                              | J    | NA                                            |
| 4  | OTHER             | OCTACHLORODIBENZO-P-DIOXIN ^^^            | 3268-87-9  | NA                                                           | 3.1E-12                                                        | 2.71E-05                              | J    | NA                                            |
| 4  | OTHER             | TCDD EQUIVALENT                           | 1746-01-6  | NA                                                           | 3.1E-12                                                        | 2.84E-08                              |      | NA                                            |
| 4  | INORGANIC         | ALUMINUM                                  | 7429-90-5  | 0.75                                                         | 0.087                                                          | <b>1.7</b>                            |      | 0.087                                         |
| 4  | INORGANIC         | ALUMINUM, DISSOLVED                       | 7429-90-5  | NA                                                           | NA                                                             | 0.32                                  |      | 0.087                                         |
| 4  | INORGANIC         | ARSENIC #                                 | 7440-38-2  | 0.34                                                         | 0.148                                                          | 0.0125                                |      | 0.19                                          |
| 4  | INORGANIC         | ARSENIC, DISSOLVED #                      | 7440-38-2  | NA                                                           | NA                                                             | 0.0892                                |      | 0.19                                          |
| 4  | INORGANIC         | BARIUM                                    | 7440-39-3  | 2                                                            | 0.22                                                           | 0.0339                                | J    | NA                                            |
| 4  | INORGANIC         | BARIUM, DISSOLVED                         | 7440-39-3  | NA                                                           | NA                                                             | 0.0288                                | J    | NA                                            |
| 4  | INORGANIC         | CHROMIUM (TOTAL) **                       | 7440-47-3  | 1.803                                                        | 0.086                                                          | 0.0082                                | J    | 0.011                                         |
| 4  | INORGANIC         | CHROMIUM, DISSOLVED **                    | 7440-47-3  | 0.12 / 0.016                                                 | 0.019 / 0.011                                                  | 0.004                                 | J    | 0.011                                         |
| 4  | INORGANIC         | COPPER #                                  | 7440-50-8  | 0.014                                                        | 0.0093                                                         | <b>0.0593</b>                         |      | 0.00654                                       |
| 4  | INORGANIC         | COPPER, DISSOLVED #                       | 7440-50-8  | 0.007                                                        | 0.00495                                                        | <b>0.0297</b>                         |      | 0.00654                                       |
| 4  | INORGANIC         | IRON                                      | 7439-89-6  | NA                                                           | 1                                                              | 2.52                                  |      | 1                                             |
| 4  | INORGANIC         | IRON, DISSOLVED                           | 7439-89-6  | NA                                                           | NA                                                             | 0.445                                 | J    | 1                                             |
| 4  | INORGANIC         | LEAD #                                    | 7439-92-1  | 0.082                                                        | 0.0032                                                         | <b>0.0387</b>                         |      | 0.00132                                       |
| 4  | INORGANIC         | LEAD, DISSOLVED #                         | 7439-92-1  | 0.0301                                                       | 0.00125                                                        | <b>0.0071</b>                         |      | 0.00132                                       |
| 4  | INORGANIC         | MANGANESE                                 | 7439-96-5  | 1.68                                                         | 0.093                                                          | 0.0492                                |      | NA                                            |
| 4  | INORGANIC         | MANGANESE, DISSOLVED                      | 7439-96-5  | NA                                                           | NA                                                             | 0.0102                                | J    | NA                                            |
| 4  | INORGANIC         | NICKEL #                                  | 7440-02-0  | 0.469                                                        | 0.052                                                          | 0.0121                                | J    | 0.08771                                       |
| 4  | INORGANIC         | SELENIUM, DISSOLVED #                     | 7782-49-2  | NA                                                           | NA                                                             | 0.0101                                |      | 0.005                                         |
| 4  | INORGANIC         | SILVER, DISSOLVED                         | 7440-22-4  | 0.00098                                                      | 0.00006                                                        | <b>0.0023</b>                         | J    | 0.000012                                      |
| 4  | INORGANIC         | VANADIUM                                  | 7440-62-2  | 0.079                                                        | 0.027                                                          | 0.004                                 | J    | NA                                            |
| 4  | INORGANIC         | VANADIUM, DISSOLVED                       | 7440-62-2  | NA                                                           | NA                                                             | 0.0093                                | J    | NA                                            |
| 4  | INORGANIC         | ZINC #                                    | 7440-66-6  | 0.12                                                         | 0.12                                                           | 0.0702                                | J    | 0.05891                                       |
| 4  | INORGANIC         | ZINC, DISSOLVED #                         | 7440-66-6  | 0.066                                                        | 0.066                                                          | 0.064                                 |      | 0.05891                                       |

**Notes:**

Maximum detected concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables and compared to the current USEPA Region 4 Ecological Screening Values to determine if exceedances have changed.

Exceedances of the Acute Screening Values are highlighted and bold and exceedances of the Chronic Screening Values are highlighted and underlined.

The original criteria applied in the 2000 SLERA are from the memorandum "Ecological Risk Assessment at Military Bases: Process Consideration, Timing of Activities and Inclusion of Stakeholders" from USEPA Region 4 (December 22, 1998).

**Abbreviations:**

\*\* -- Criteria for chromium III / chromium VI

^^^ -- Criteria for dioxins/furans

# -- Criteria for total or dissolved metals; dissolved criteria based on default hardness of 50 mg/L as CaCO<sub>3</sub>.

FU -- Functional Unit

J -- Estimated concentration

NA -- Not available

**References:**

USEPA Region 4. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. March. Available online: <https://www.epa.gov/risk/regional-ecological-risk-assessment-era-supplemental-guidance>



Table 4a



Comparison of Surface Soil (0-2 ft) Dioxin and Furan Analytical Results to Screening Criteria

Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee

| FU | Constituent Group | Constituent                                             | CASRN      | USEPA R4 Ecological Soil Screening Level (mg/kg) | USEPA RSL Industrial Soil (mg/kg) |       | Maximum Detected Concentration (mg/kg) | Qual |
|----|-------------------|---------------------------------------------------------|------------|--------------------------------------------------|-----------------------------------|-------|----------------------------------------|------|
|    |                   |                                                         |            |                                                  | Value                             | Basis |                                        |      |
| 1  | PEST              | DIBENZOFURAN                                            | 132-64-9   | 0.15                                             | 100                               | n     | <b>2.2</b>                             | J    |
| 2  | PEST              | DIBENZOFURAN                                            | 132-64-9   | 0.15                                             | 100                               | n     | 0.056                                  | J    |
| 3  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN <sup>^^</sup>     | 67562-39-4 | 0.0000315                                        | 0.000022                          | c**   | <b>0.00029</b>                         | J    |
| 3  | PEST              | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN <sup>^^</sup>     | 55673-89-7 | 0.0000315                                        | 0.000022                          | c**   | 0.000003                               | J    |
| 3  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 70648-26-9 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000004</b>                        | J    |
| 3  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 57117-44-9 | 0.0000315                                        | 0.000022                          | c**   | 0.000002                               | J    |
| 3  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 60851-34-5 | 0.0000315                                        | 0.000022                          | c**   | 0.000003                               | J    |
| 3  | PEST              | DIBENZOFURAN                                            | 132-64-9   | 0.15                                             | 100                               | n     | <b>2.4</b>                             | J    |
| 3  | PEST              | OCTACHLORODIBENZOFURAN <sup>^^</sup>                    | 39001-02-0 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000697</b>                        | J    |
| 3  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN <sup>^^</sup>    | 57653-85-7 | 0.0000315                                        | 0.00047                           | c     | <b>0.000008</b>                        | J    |
| 3  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN <sup>^^</sup>    | 19408-74-3 | 0.0000315                                        | 0.00047                           | c     | <b>0.000005</b>                        | J    |
| 3  | PEST              | OCTACHLORODIBENZO-p-DIOXIN <sup>^^</sup>                | 3268-87-9  | 0.0000315                                        | 0.000022                          | c**   | <b>0.01025</b>                         |      |
| 3  | PEST              | TCDD Equivalent <sup>^^</sup>                           | 1746-01-6  | 0.0000315                                        | 0.000022                          | c**   | <b>0.0000103</b>                       |      |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN <sup>^^</sup>     | 67562-39-4 | 0.0000315                                        | 0.000022                          | c**   | <b>0.012004</b>                        |      |
| 4  | PEST              | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN <sup>^^</sup>     | 55673-89-7 | 0.0000315                                        | 0.000022                          | c**   | <b>0.00018</b>                         | J    |
| 4  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 70648-26-9 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000401</b>                        | J    |
| 4  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 57117-44-9 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000135</b>                        | J    |
| 4  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 72918-21-9 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000012</b>                        | J    |
| 4  | PEST              | 1,2,3,7,8-PENTACHLORODIBENZOFURAN <sup>^^</sup>         | 57117-41-6 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000012</b>                        | J    |
| 4  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN <sup>^^</sup>        | 60851-34-5 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000414</b>                        | J    |
| 4  | PEST              | 2,3,4,7,8-PENTACHLORODIBENZOFURAN <sup>^^</sup>         | 57117-31-4 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000014</b>                        | J    |
| 4  | PEST              | DIBENZOFURAN                                            | 132-64-9   | 0.15                                             | 100                               | n     | <b>0.44</b>                            |      |
| 4  | PEST              | OCTACHLORODIBENZOFURAN <sup>^^</sup>                    | 39001-02-0 | 0.0000315                                        | 0.000022                          | c**   | <b>0.039746</b>                        |      |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN <sup>^^</sup> | 67562-39-4 | 0.0000315                                        | 0.000022                          | c**   | <b>0.023402</b>                        |      |
| 4  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN <sup>^^</sup>    | 39227-28-6 | 0.0000315                                        | 0.00047                           | c     | <b>0.000131</b>                        | J    |
| 4  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN <sup>^^</sup>    | 57653-85-7 | 0.0000315                                        | 0.00047                           | c     | <b>0.001318</b>                        | J    |
| 4  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN <sup>^^</sup>    | 19408-74-3 | 0.0000315                                        | 0.00047                           | c     | <b>0.000292</b>                        | J    |
| 4  | PEST              | 1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN <sup>^^</sup>     | 40321-76-4 | 0.0000315                                        | 0.000022                          | c**   | <b>0.000055</b>                        | J    |
| 4  | PEST              | OCTACHLORODIBENZO-p-DIOXIN <sup>^^</sup>                | 3268-87-9  | 0.0000315                                        | 0.000022                          | c**   | <b>0.072102</b>                        |      |
| 4  | PEST              | TCDD Equivalent <sup>^^</sup>                           | 1746-01-6  | 0.0000315                                        | 0.000022                          | c**   | <b>0.000083</b>                        |      |
| 5  | PEST              | DIBENZOFURAN                                            | 132-64-9   | 0.15                                             | 100                               | n     | <b>1.2</b>                             | J    |

**Notes:**

Maximum detected concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables.

Exceedances of the USEPA Region 4 Ecological Screening Values are highlighted and bold.

Exceedances of the USEPA Regional Screening Levels Industrial Soil are underlined and bold.

**Abbreviations:**<sup>^^</sup> -- Criteria for 2,3,7,8-TCDD (dioxin) applied to dioxins/furans

FU -- Functional Unit

J -- Estimated concentration

NA -- Not available

**References:**USEPA Region 4. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. March. Available online: <https://www.epa.gov/risk/regional-ecological-risk-assessment-era-supplemental-guidance>USEPA. 2017. Regional Screening Levels (RSLs) - Generic Tables. November. Available online: <https://www.epa.gov/risk/regional-screening-levels-rsls>**RSL Basis:**

\*\* -- Where noncancer RSL &lt; 10 times cancer RSL

c -- Cancer

n -- Noncancer

Table 4b

## Comparison of Sediment Dioxin and Furan Analytical Results to Screening Criteria

## Human Health and Ecological Risk Assessment

Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                                     | CASRN      | EPA R4 Ecological Freshwater Sediment Screening Value Narcotic Mode (mg/kg) | EPA R4 Ecological Freshwater Sediment Screening Value Non-Narcotic Mode (mg/kg) | Maximum Detected Concentration (mg/kg) | Qual |
|----|-------------------|-------------------------------------------------|------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------|------|
| 2  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^       | 67562-39-4 | NA                                                                          | 0.0000025                                                                       | <u>0.000556</u>                        |      |
| 2  | PEST              | DIBENZOFURAN ^^^                                | 132-64-9   | 0.151                                                                       | 0.0000025                                                                       | <u>0.14</u>                            | J    |
| 2  | PEST              | HEPTACHLORINATED DIBENZOFURANS, (TOTAL) ^^^     | 38998-75-3 | NA                                                                          | 0.0000025                                                                       | <u>0.00198</u>                         |      |
| 2  | PEST              | HEXACHLORINATED DIBENZOFURANS, (TOTAL) ^^^      | HxCDF      | NA                                                                          | 0.0000025                                                                       | <u>0.000598</u>                        |      |
| 2  | PEST              | OCTACHLORODIBENZOFURAN ^^^                      | 39001-02-0 | NA                                                                          | 0.0000025                                                                       | <u>0.0024</u>                          | J    |
| 2  | PEST              | PENTACHLORINATED DIBENZOFURANS, (TOTAL) ^^^     | PeCDF      | NA                                                                          | 0.0000025                                                                       | <u>0.000106</u>                        |      |
| 2  | PEST              | TETRACHLORINATED DIBENZOFURANS, (TOTAL) ^^^     | TCDF       | NA                                                                          | 0.0000025                                                                       | <u>0.0000123</u>                       |      |
| 2  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN ^^^   | 35822-46-9 | NA                                                                          | 0.0000025                                                                       | <u>0.00644</u>                         |      |
| 2  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN ^^^      | 57653-85-7 | NA                                                                          | 0.0000025                                                                       | <u>0.0000929</u>                       | J    |
| 2  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN ^^^      | 19408-74-3 | NA                                                                          | 0.0000025                                                                       | <u>0.000146</u>                        | J    |
| 2  | PEST              | HEPTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) ^^^ | HpCDD      | NA                                                                          | 0.0000025                                                                       | <u>0.0126</u>                          |      |
| 2  | PEST              | HEXACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) ^^^  | HxCDD      | NA                                                                          | 0.0000025                                                                       | <u>0.00103</u>                         |      |
| 2  | PEST              | OCTACHLORODIBENZO-p-DIOXIN ^^^                  | 3268-87-9  | NA                                                                          | 0.0000025                                                                       | <u>0.0616</u>                          |      |
| 2  | PEST              | PENTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) ^^^ | PeCDD      | NA                                                                          | 0.0000025                                                                       | <u>0.0000128</u>                       |      |
| 2  | PEST              | TCDD Equivalent                                 | 1746-01-6  | NA                                                                          | 0.0000025                                                                       | <u>0.0000635</u>                       |      |
| 4  | PEST              | HEPTACHLORINATED DIBENZOFURANS, (TOTAL) ^^^     | 38998-75-3 | NA                                                                          | 0.0000025                                                                       | <u>0.0043</u>                          | J    |
| 4  | PEST              | OCTACHLORODIBENZOFURAN ^^^                      | 39001-02-0 | NA                                                                          | 0.0000025                                                                       | <u>0.014863</u>                        | J    |
| 4  | PEST              | HEPTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL) ^^^ | HpCDD      | NA                                                                          | 0.0000025                                                                       | <u>0.0093</u>                          | J    |
| 4  | PEST              | OCTACHLORODIBENZO-p-DIOXIN ^^^                  | 3268-87-9  | NA                                                                          | 0.0000025                                                                       | <u>0.114256</u>                        | J    |
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^       | 67562-39-4 | NA                                                                          | 0.0000025                                                                       | <u>0.006989</u>                        |      |
| 4  | PEST              | 1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN ^^^       | 55673-89-7 | NA                                                                          | 0.0000025                                                                       | <u>0.00011</u>                         | J    |
| 4  | PEST              | 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN ^^^          | 70648-26-9 | NA                                                                          | 0.0000025                                                                       | <u>0.000074</u>                        | J    |
| 4  | PEST              | 1,2,3,6,7,8-HEXACHLORODIBENZOFURAN ^^^          | 57117-44-9 | NA                                                                          | 0.0000025                                                                       | <u>0.000079</u>                        | J    |
| 4  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN ^^^          | 60851-34-5 | NA                                                                          | 0.0000025                                                                       | <u>0.000022</u>                        | J    |
| 4  | OTHER             | 1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN ^^^   | 67562-39-4 | NA                                                                          | 0.0000025                                                                       | <u>0.0238</u>                          |      |
| 4  | OTHER             | 1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN ^^^      | 39227-28-6 | NA                                                                          | 0.0000025                                                                       | <u>0.000014</u>                        | J    |
| 4  | OTHER             | 1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN ^^^      | 57653-85-7 | NA                                                                          | 0.0000025                                                                       | <u>0.00026</u>                         | J    |
| 4  | OTHER             | 1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN ^^^      | 19408-74-3 | NA                                                                          | 0.0000025                                                                       | <u>0.00015</u>                         | J    |
| 4  | PEST              | TCDD Equivalent                                 | 1746-01-6  | NA                                                                          | 0.0000025                                                                       | <u>0.0001291</u>                       |      |

**Notes:**

Maximum detected concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables.

Exceedances of the Narcotic Mode values are highlighted and bold and exceedances of the Non-Narcotic Mode values are highlighted and underlined.

**Abbreviations:**

^^^ -- Criteria for 2,3,7,8-TCDD (dioxin) applied to dioxins/furans

FU -- Functional Unit

J -- Estimated concentration

NA -- Not available

**References:**USEPA Region 4. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. March. Available online: <https://www.epa.gov/risk/regional-ecological-risk-assessment-era-supplemental-guidance>

Table 4c

Comparison of Surface Water Dioxin and Furan Analytical Results to Screening Criteria  
Human Health and Ecological Risk Assessment  
Main Installation - Defense Depot Memphis, Tennessee



| FU | Constituent Group | Constituent                               | CASRN      | EPA R4 Ecological Freshwater Surface Water Screening Value Acute (mg/L) | EPA R4 Ecological Freshwater Surface Water Screening Value Chronic (mg/L) | Maximum Detected Concentration (mg/L) | Qual |
|----|-------------------|-------------------------------------------|------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------|------|
| 4  | PEST              | 1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN ^^^ | 67562-39-4 | NA                                                                      | 3.1E-12                                                                   | <u>0.0000007</u>                      | J    |
| 4  | PEST              | 1,2,3,7,8,9-HEXACHLORODIBENZOFURAN ^^^    | 72918-21-9 | NA                                                                      | 3.1E-12                                                                   | <u>0.0000003</u>                      | J    |
| 4  | PEST              | 2,3,4,6,7,8-HEXACHLORODIBENZOFURAN ^^^    | 60851-34-5 | NA                                                                      | 3.1E-12                                                                   | <u>0.0000051</u>                      | J    |
| 4  | PEST              | OCTACHLORODIBENZOFURAN ^^^                | 39001-02-0 | NA                                                                      | 3.1E-12                                                                   | <u>1.30E-06</u>                       | J    |
| 4  | OTHER             | OCTACHLORODIBENZO-P-DIOXIN ^^^            | 3268-87-9  | NA                                                                      | 3.1E-12                                                                   | <u>2.71E-05</u>                       | J    |
| 4  | OTHER             | TCDD EQUIVALENT                           | 1746-01-6  | NA                                                                      | 3.1E-12                                                                   | <u>2.84E-08</u>                       |      |

**Notes:**

Maximum detected concentrations were taken from the 2000 DDMT Main Installation Remedial Investigation Report tables.

Exceedances of the Acute Screening Values are highlighted and bold and exceedances of the Chronic Screening Values are highlighted and underlined.

**Abbreviations:**

^^^ -- Criteria for 2,3,7,8-TCDD (dioxin) applied to dioxins/furans

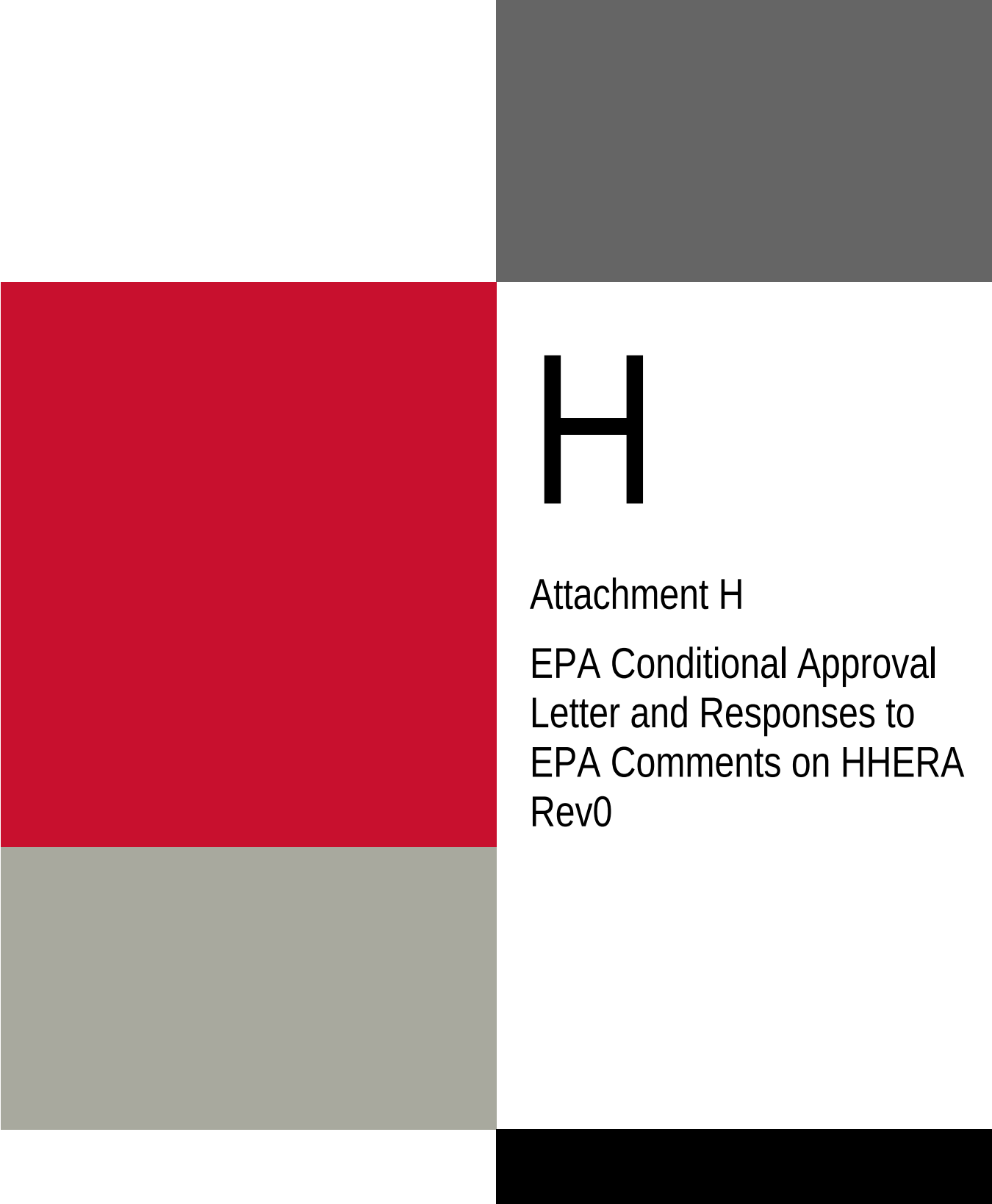
FU -- Functional Unit

J -- Estimated concentration

NA -- Not available

**References:**

USEPA Region 4. 2018. Region 4 Ecological Risk Assessment Supplemental Guidance. March. Available online: <https://www.epa.gov/risk/regional-ecological-risk-assessment-era-supplemental-guidance>



# H

Attachment H

EPA Conditional Approval  
Letter and Responses to  
EPA Comments on HHERA  
Rev0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

April 29, 2019

Mr. James Foster  
Base Realignment and Closure Division (ACSIM-ODB)  
2530 Crystal Drive (Taylor Building), Room 5000  
Arlington, VA 22202-3940

Dear Mr. Foster:

The U.S. Environmental Protection Agency (EPA) has received and reviewed the U.S. Department of the Army's Revised Responses to EPA Comments dated December 11, 2018 which were in response to EPA Comments, dated July 23, 2018 on the Human Health and Ecological Risk Assessment (HHERA) dated April 2018.

The U.S. EPA and the U.S. Army had several teleconferences on April 12, 2019 and April 26, 2019 to discuss the previously noted concerns outlined by EPA Comment Letter dated April 08, 2019. EPA and the Army have agreed upon path forward based on our April 2019 teleconferences and EPA has agreed to extend a conditional approval for the above mentioned report with the understanding that the comments noted below will be addressed in future HHERA submittals. EPA has reattached the comments below for reference and clarity only.

- US Army will address EPA comments I. 5, 6, 7, 10; II. 3, 6, 7, 15a, 16; IV. 1, 2 and 4 through Revision 1 of the 2018 HHERA
- US Army will address the remaining EPA comments through the upcoming VI study and/or additional review, sampling and risk assessment performed under the new task order and this data will be captured in the future HHERA submittal

Should you have any questions or concerns, please feel free to call me at on my cell number 404-229-9500.

Sincerely,

A handwritten signature in black ink, appearing to read "Diedre Lloyd", is written over a horizontal line.

Diedre Lloyd  
Remedial Project Manager  
Restoration & Sustainability Branch  
Region 4, Superfund Division

Internet Address (URL) - <http://www.epa.gov>

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**US EPA RESPONSES TO US ARMY COMMENTS (December 11, 2018) on the  
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT  
REVISION 0**

**MAIN INSTALLATION  
APRIL 2018**

**DEFENSE DEPOT  
MEMPHIS, TENNESSEE**

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**General Comments:**

- 1) EPA notes that a revised HHRA was not provided for review; therefore, the revisions to the HHRA proposed in the US Army responses to EPA could not be fully evaluated. The US Army provided three proposed resolutions as outlined in three bullets below in italics:
- a) *Comment accepted and will be addressed through changes made in Revision 1 of the 2018 HHRA: Comments I. 5, 6, 7, 10; II. 3, 6, 7, 15a, 16; IV. 1, 2 and 4.*
  - b) *Comment accepted and will be addressed through the VI study and/or additional review, sampling and risk assessment performed under the new task order: I. 1, 2, 4, 8, 9; II. 1, 2, 8 – 14, 15b; III. 1; IV. 3; V.1-5.*
  - c) *Comment not considered to require revision to the 2018 HHRA or additional assessment: I. 3; II. 4, 5; VI. 1.*

**Bullet 1: EPA awaits the opportunity to provide review of the HHRA revisions outlined in this bullet**

**Bullet 2: See Comment # 3 below, inclusive of all subparts**

**Bullet 3: See responses below and EPA ecological risk assessor responses below** (previously sent in a preliminary email)

- 2) **Evaluation of the Response to Human Health Risk Assessment (HHRA) General Comment 6:**  
The response partially addresses the comment. Noting that concentrations of dieldrin, Aroclor 1260, arsenic, and various polycyclic aromatic hydrocarbons are present in soil at Functional Unit (FU) 6 at concentrations exceeding the EPA Regional Screening Level (RSL) for residential soil, it is unclear if the unrestricted use designation for a portion of FU-6 is appropriate. It is noted that Section 8.5, Conclusions, and Section 10.2, Soil HHRA Review, state, “the current Soil HHRA review found that most organic and inorganic constituents detected at the former Depot are present at levels that do not exceed current Industrial RSLs. Therefore...it does not appear that a revised soils-only HHRA is necessary in order to adequately assess potential incremental health risks and assure protectiveness of the remedy.” However, no assessment regarding whether the conclusions of the Soils HHRA remain valid for the unrestricted use portions of FU-6 is presented, including whether the remedial actions completed since that time are protective of applicable receptor populations (which have the potential to include residential users).
- a) Ensure that revisions to the Human Health and Ecological Risk Assessment, Revision 0, Main Installation, dated April 2018 (the HHRA) include an evaluation of whether the conclusions of the 2000 Soils HHRA are still valid for the unrestricted use portion of FU-6,

and discuss whether the remedial actions completed since that time are protective of applicable receptor populations.

- 3) Evaluation of the Response to Ecological Risk Assessment (ERA) General Comment 1 and Specific Comment 3:** The response partially addresses the comment. For example, the responses indicate that the need for conducting a Screening Level Ecological Risk Assessment (SLERA) will be evaluated and recommendations provided in an updated HHERA. However, this is a vague statement and should be further described. It is generally accepted that conducting a SLERA is one of the first steps in the ERA process. A situation in which this might not be the case is during the first site visit and problem formulation steps, which determines that there are no complete ecological receptor exposure pathways associated with the site. This is often documented in using a formal ecological scoping checklist/evaluation.
- a) It is recommended that the SLERA-related evaluation of responses to comments include specific references to ERA methods (EPA and/or site-specific) and location/application of scientific management decision points (with respect to the 8-step ERA process) associated with evaluating the need to conduct a SLERA. This inclusion will be useful in saving time and resources needed to comment/respond to any potential issues associated with inappropriate application of standard or site-specific guidance in the updated HHERA.
  - b) As noted in Human Health Risk Assessment (HHRA) General Comment (GC) 2, an assessment of vapor intrusion (VI) potential predicated on residential exposure assumptions have not been conducted for the eastern parcel, which is available for unrestricted use. GC 2 requested that groundwater concentrations detected on and in the vicinity of this parcel be evaluated for VI potential using residential-use based screening criteria. The response to GC 2 states that no change to the HHERA is necessary, as a VI study is ongoing [as documented in the Memorandum: Soil Vapor Sampling, Main Installation Vapor Intrusion Study, dated January 15, 2019 (hereinafter the 2019 VI Memo)]. The response goes on to state that soil gas samples collected in August 2018 were collected at locations considered most likely to contain volatile organic compounds in soil and/or groundwater at concentrations that may result in unacceptable vapor intrusion risk, and that soil gas data will be evaluated using residential use-based screening criteria. However, EPA notes that numerous issues were identified in review of the 2019 VI Memo related to the response to GC 2. These included the following:
    - No soil gas sampling was conducted at the eastern parcel specifically; and,
    - It is unclear if the current assessment did, in fact, characterize those areas that had the potential to present the greatest vapor intrusion risk as stated in the response to GC 2.
  - c) EPA understands that additional vapor intrusion sampling is currently proposed based on the results of the initial soil gas sampling presented in the 2019 VI Memo. As part of that effort, EPA strongly recommends that the potential for VI to occur on the eastern parcel of the property be properly assessed to ensure the protection of human health and the environment.

**1<sup>ST</sup> Iteration – Sharon Thom’s Comments, as outlined in preliminary EPA email dated February 18, 2019 at 8:40 am (DOD and Army have been used interchangeably in this section)**

- 4)** The DoD in their responses said they were in the process of conducting a vapor intrusion study. DoD agreed to review the existing data and decide whether to collect additional analytical data, in which case DoD would prepare a QAPP. The comment pertains primarily to the areas where dioxins/furans were detected in shallow and deeper soils of a portion of FU3 and FU4 as well as in other media. This was **comment 13 in Section II.** The DoD response lacks specificity and does not fully address

EPA's comment that requests a complete description with figures showing where the dioxin/furan exceedances occur and to identify the other media that are impacted. Figures are needed for the off-site waterways that are impacted by dioxin/furans in sediment.

- a) EPA requests more than a data review - an update to the conceptual site model is needed to address potential transport of site-related contamination to off-site waterways.

**5) In Comment 1 in Section III**

- a) EPA requests that DoD calculate hazard quotients (HQs) for constituents that exceed their respective ecological screening levels

**6) Appendix G:** DoD responded that the recommendation to perform a screening-level ecological risk assessment (SLERA) will be evaluated following additional sampling and human health risk assessment.

- a) The EPA comment requests that data presented in Appendix G be screened against the March 2018 Region 4 Supplemental Ecological Risk Assessment Guidance. However, the data in Appendix G was screened against the current RSLs for human health.
  - i. Please ensure that a revised Table as described above, specifically, a table that is screened against the March 2018 R4 Supplemental Ecological Risk Assessment Guidance is included in the revised submittal.
- b) The text described the constituents that exceeded the screening values, but the backup information to support the conclusions was not presented in Appendix G.
- c) The DoD response did not agree to revise Appendix G to address this deficiency unless new data were collected at which time probably only the new data would be screened, if and only if there was some indication this was necessary based on the human health risk assessment conclusions.
  - i. Please indicate that this table will also be revised in subsequent submittals
- d) In order for EPA to evaluate this issue, DOD needs to provide the requested data as outlined in this comment. DOD stated purpose of the submitted HHERA was to evaluate the former risk assessments against updates to the EPA risk assessment guidances. The results of the screening with the 2018 guidance compared to the results of the 2000 SLERA are not substantially different from the calculations that EPA Ecological Risk Assessor (S. Thom) has completed. However, DoD has not adequately supported their conclusions in the main text and had not provided the supporting information in the Appendix G data table.
  - i. Please provide the requested information and additional specificity as requested.

**7) Comment 3 in Section IV** contains contradictory information and data appears to be missing that potentially obscures the implications. The comment refers to Section 9.4 of the HHERA that stated:

- a) There is the potential for COCs to be conveyed off-site via stormwater runoff, as noted in the MI RI. While the watershed assessment indicates that runoff from the MI is not likely to have a significant impact on the ability of local surface water bodies to support wildlife and aquatic-dependent species or habitat, the detection of dioxin/furans in on-site soil, as well as in surface water and sediment in local streams warrants additional study.
  - i. Please provide additional data that clarifies this issue

**8) Comment 3 in Section IV** requested an evaluation of the exposure to offsite receptors from dioxin/furans in surface soils and on-site drainage pathways through erosion and transport to offsite waterways. The DoD response stated that inconsistencies would be eliminated.

- a) However, the response did not clarify how they would be eliminated. It is unclear if there are ecological exposures to the contaminants on-site. However, the site is not protective if site-related contamination is washing off and entering off-site waterways where there is the potential for downstream transport and exposure to receptors. The DoD response is not specific and does not describe what actions will be taken to address the EPA comment.



- i. DoD needs to support assertions that the pentachlorophenol and dioxin/furans detected in the sediments and/or surface water of the off-site waterways do not present an ecological risk. EPA requests that DoD include a SLERA at a minimum to address this concern.
- ii. If DoD thinks that the data is old, they might want to collect more sediment and analyze for pentachlorophenol and dioxins/furans.

**9) Section V Comments 1 – 5 were not addressed.** EPA requests the rationale for a SLERA subsequent to the evaluation and updated HHRA. EPA is concerned that contamination in surface water and sediments could present an ecological and potentially human health risk from an off-site waterway.

**10) In comment 5, Section V,** I was trying to give a relatively simple way to think about soil contamination as a potential source of contamination in surface water runoff. The guidance document that was cited in the DoD response pertains to estimating the amount of pollution reduced by a Superfund remedy. It does not apply to the particular situation here.

- a) Because the DDMT site is mainly buildings and pavement with some grass, most rainfall will become runoff. The sediments delivered in the runoff will have contaminant concentrations reflecting the concentrations in the top inch or so of soil. The average concentration in the surface soil is a good predictor of the concentrations in the sediment that is washed off the site. A remedy to address stormwater runoff and sediment transport could serve this site well.
  - i. EPA suggests: A more thorough method to address this comment would be to run the universal soil loss equation.

**11) In conclusion:**

- a) The Army needs to outline specifically what actions and data will be collected to characterize dioxins/furans and pentachlorophenol in FU3 & FU4 soils or in sediments and surface water of the off-site waterways.
- b) The Army needs to outline specifically what actions, reports and data will be collected in the upcoming HHRA to ensure that all parties are “on the same page” to ensure DQOs are met to ensure site protectiveness of human health and the environment
- c) The Army needs to revise the HHRA to include the updated SLERA with the new ecological screening values.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

The baseline risk assessment for the Main Installation at DDMT was presented in the Main Installation Remedial Investigation (CH2M HILL 2000). The primary task of the HHERA was to update the groundwater component of the 2000 HHRA; secondary tasks were to review the soil component of the 2000 HHRA and the 2000 SLERAs based on current conditions and guidance.

Responses to EPA comments on the HHERA Rev0 are provided below. Many of the comments identify issues that were not fully considered in the HHERA. In many cases, that is because the HHERA did not include updates to the soil HHRA or the SLERA. Section 10 of the HHERA presents recommendations for additional work which is to be performed in a separate task order to be awarded in late 2018.

As noted in the specific responses below, the comments have one of three proposed resolutions:

- Comment accepted and will be addressed through changes made in Revision 1 of the 2018 HHERA: Comments I. 5, 6, 7, 10; II. 3, 6, 7, 15a, 16; IV. 1, 2 and 4.
- Comment accepted and will be addressed through the VI study and/or additional review, sampling and risk assessment performed under the new task order: I. 1, 2, 4, 8, 9; II. 1, 2, 8 – 14, 15b; III. 1; IV. 3; V.1-5.
- Comment not considered to require revision to the 2018 HHERA or additional assessment: I. 3; II. 4, 5; VI. 1.

## **COVER LETTER**

The cover letter states: “No new data was collected for this reporting effort and all assumptions are based on previously collected data that is 18 years old. “

**Response:** The groundwater HHRA update evaluated data from samples collected by HDR from 2012 to 2017, consisting of 1,424 groundwater field samples from wells on or adjacent to the MI. The statement of work included only a review of the soil HHRA and the SLERA; no new samples were collected for soil, surface water and sediment. Based on the findings of the MI RI and the selected remedy in the ROD, only limited sampling and analysis of soil samples from the MI has been conducted since completion of the MI RI, and no surface water or sediment samples have been collected since that time.

## **I. EPA HUMAN HEALTH RISK ASSESSMENT (HHRA) GENERAL COMMENTS:**

1. Review of the Attachment C, Vapor Intrusion Screening Level Assessment, indicates that only select volatile organic compounds (VOCs) were evaluated for vapor intrusion (VI) potential. However, sufficient rationale for use of a truncated list of contaminants of potential concern (COPCs) is not provided, and it is unclear if projected risk and hazard has been underestimated. Revise the VI assessment to include a presentation of risk and hazard predicated on all VOCs that exceed health-based screening criteria, as opposed to select VOCs, or provide data and figures that support use of the truncated list.

**Response:** No change to the 2018 HHERA report, including the VISL assessment, is considered necessary for this comment. Analytical results and risk assessment from the ongoing VI study will be incorporated in an updated HHERA following additional data collection and risk assessment as described in Section 10 of the HHERA Rev0 and in response to these comments.

The VISL assessment was based on identified ground water contaminants, comprised of the VOCs in

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

groundwater identified in the ROD as requiring remediation. The VOCs identified in the ROD consisted of PCE and TCE; cDCE, vinyl chloride, carbon tetrachloride and chloroform were added based on LTM sample results indicating the presence of additional VOCs, including degradation products following enhanced bioremediation.

Soil gas samples were collected in August 2018 in accordance with the MI VI Soil Gas Sampling QAPP (HDR 2018). Analyses of soil gas included all TO-15 VOCs. All detected constituents will be compared to screening criteria and laboratory limits will be compared to screening criteria for non-detected analytes. The VI analyses and risk assessment findings will be provided in a technical memorandum for regulatory agency review.

2. As discussed in Section 4.2, Receptors, and stated in Attachment C, Vapor Intrusion Screening Level Assessment, land use controls (LUCs) which prevent residential use of the site have been established for the majority of the Main Installation, except the eastern parcel, which is available for unrestricted use. However, an assessment of VI potential predicated on residential exposure assumptions has not been conducted for the eastern parcel. It is noted that groundwater concentrations detected on and within 100 feet of the eastern parcel exceed residential-use based screening criteria [e.g., trichloroethene has been detected in well MW-50 at a concentration of 3.58 micrograms per Liter ( $\mu\text{g/L}$ ), which exceeds the residential vapor intrusion screening level of 1.2  $\mu\text{g/L}$ ]. Given that the eastern parcel of the Main Installation is available for unrestricted land use, groundwater concentrations detected on and in the vicinity of this parcel should be evaluated for VI potential using residential-use based screening criteria. Revise the human health risk assessment (HHRA) to include this assessment, or provide sufficient rationale for why this assessment is not necessary. Until such time as subsurface soil gas samples are collected, groundwater concentrations of TCE should be compared to both the VI based screening level and the drinking water MCL.

**Response:** No change to the 2018 HHRA report is considered necessary for this comment. Analytical results and risk assessment from the ongoing VI study will be incorporated in an updated HHRA following additional data collection and risk assessment including comparison to residential screening levels.

Soil gas samples were collected in August 2018 at locations considered most likely to contain VOCs in soil and/or groundwater at concentrations that may present a VI human health risk. The soil gas concentrations will be evaluated based on consideration of VOC concentrations in soil and/or groundwater at that location and other factors such as depth to water and soil layering between the water table and the ground surface. Correlation of soil gas and groundwater concentrations should indicate whether additional soil gas samples in areas with lower groundwater concentrations is necessary.

The soil gas analytical results will be evaluated for VI risk based on current and reasonably expected future conditions including use of residential-use based screening criteria. The VI analyses and risk assessment findings will be provided in a technical memorandum for regulatory agency review and will be incorporated in a later HHRA following additional data collection. MCLs are the remediation goals for groundwater at DDMT and the plume maps use the MCL to identify contaminant extent. Since the VI based screening level for TCE (7.5  $\mu\text{g/L}$ ) is higher than the MCL (5  $\mu\text{g/L}$ ), the current maps provide a conservative estimate for potential VI risk.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

3. Review of the Attachment C, Vapor Intrusion Screening Level Assessment, indicates that risk and hazard to a commercial worker were estimated using the Johnson and Ettinger Model (JEM) in addition to EPA's Vapor Intrusion Screening Level Calculator. It should be noted that EPA no longer supports the use of the JEM to contraindicate VI potential where concentrations of contaminants in contributing media (e.g., groundwater) exceed generic VI-based screening levels. The JEM may be used as a supporting line of evidence, but is more often used as a prioritization tool when selecting sampling locations for a VI assessment. It is understood that soil gas sampling to assess the VI pathway is currently planned. Ensure that the JEM is not used as a sole line of evidence to contraindicate VI potential in any forthcoming VI assessment when contributing source concentrations exceed health-based VI screening criteria.

**Response:** No change to the 2018 HHRA report is considered necessary for this comment.

This comment was previously addressed following EPA review of the VI Soil Gas Sampling QAPP. Army agrees that JEM should not be used as a sole line of evidence for VI potential. JEM was used with EPA's VISL calculator to provide a comparison incorporating site-specific information (e.g. depth to water, soil lithology). Use of JEM was discussed with EPA and included in the VI study statement of work (SOW). JEM identified potential VI risk at the MI, although up to an order of magnitude lower than indicated by the VISL calculator results. JEM will also be used with the VISL calculator to evaluate VOC concentrations in soil gas samples in accordance with the SOW.

4. As discussed in Section 8.0, Review of 2000 Soils HHRA, the soil component of the 2000 HHRA was reviewed to determine if "the conclusions of the Soils HHRA are still valid and whether or not the remedial actions completed since that time are protective." The HHRA does not discuss or evaluate if the data used in the 2000 HHRA remain representative of current conditions. As such, it is unclear if the conclusions drawn in review of the 2000 HHRA are appropriate and applicable. Revise Section 8.0 to discuss and evaluate if the data used in the 2000 HHRA remain representative of current conditions.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

Additional soil sampling and risk assessment was recommended in Section 10.2 of the HHRA. A more detailed review of existing analytical data will be performed prior to developing the sampling plan. The review will include evaluating whether the 2000 HHRA data remains representative; the data review and the sampling plan will be provided in a QAPP submitted for EPA review.

5. Section 8.0, Review of 2000 Soils HHRA, presents a comparison of exposure point concentrations (EPCs) for contaminants of potential concern (COPCs) selected in the 2000 HHRA to the current EPA Regional Screening Levels (RSLs) for industrial soil. It is unclear if COPCs were appropriately selected in the 2000 HHRA based on review of Section 8.1.2, Soils HHRA Methodology. Therefore, it is unclear if data were inappropriately excluded from the current comparison of EPCs to RSLs. For example, Section 8.1.2 states that frequency of detection and historical use were considered in the selection of COPCs. It is noted that factors such as frequency of detection and historical use are generally inappropriate for use in the selection of COPCs (as opposed to refinement of a target analyte list), unless specifically approved by EPA. If previous agreement has been reached with EPA on this issue, it should be clearly explained in the HHRA. Revise Section 8.0 to provide a table which presents the COPC

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Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

selection process used in the 2000 HHRA such that it can be independently reviewed, and to support the appropriateness of the COPC list used in the evaluation of EPCs against the current RSLs.

**Response:** The language in Section 8.1.2 of the 2018 HHERA will be revised.

In the 2000 HHRA, Section 7.2 incorrectly indicates that frequency of detection and historical use were used as criteria for COPC elimination. Review of Section 7.3 and Appendix D, Table D.1 of 2000 HHRA indicates these criteria were not used to eliminate COPCs.

6. Review of Figure 1-1, Unit Boundaries, indicates that a portion of functional unit (FU)-6 is available for unrestricted use; however, no assessment of the FU-6 soil data used in the 2000 HHRA is presented to demonstrate that the conclusions of the 2000 HHRA are still valid and the remedy remains protective. It is noted that Section 8.3.6, FU6, indicates that concentrations of dieldrin, Aroclor 1260, arsenic, and benzo(a)pyrene remain in FU-6 soil at concentrations that exceed the current RSL for industrial soil; no screening of data in comparison to current RSLs for residential soil is presented. To demonstrate that the conclusions of the 2000 HHRA are still valid and the remedy remains protective at FU-6 it appears that data warrant screening in comparison to current RSLs for residential soil at FU-6. Revise the HHRA to conduct this screening or explain why this is not necessary.

**Response:** Text in Section 8.3.6 of the 2018 HHERA will be revised.

Screening of EPC data, as compared to current RSLs for residential soil is presented in Attachment F, Table 1. Text in Section 8.3.6 will be revised to include the residential assessment for those limited areas of FU-6 as shown on Figure 2-3b of the MI ROD.

7. Based on review of Section 8.3, Review of Current Conditions using 2000 MI RI Data by FU, no assessment of data used in the 2000 HHRA in comparison to current RSLs for residential soil is presented. With the exception of FU-6, it is presumed that this assessment was not conducted as land use controls are in place to preclude residential land use; however, this is not explicitly stated. Revise Section 8.3 to clarify why no assessment of data used in the 2000 HHRA in comparison to current RSLs for residential soil was conducted.

**Response:** Text in Section 8.3 of the 2018 HHERA will be revised.

Text in Section 8.3 will be revised to state the FUs are designated for industrial use by land use controls (except for areas of FU-6). A comparison of the 2000 MI RI soil data to current RSLs for residential use was provided in Attachment F, Table 1.

8. Insufficient data and information are presented in Section 8.0, Review of 2000 Soils HHRA, to allow the reader to understand the concentrations of dioxins/furans that remain onsite and what data set was used in the updated assessment (i.e., selection of maximum concentrations for comparison to current RSLs), and to demonstrate that the dioxin/furan data were appropriately assessed as part of the current HHRA. For example,
  - a. Section 8.2.2.1, Removal Action, states that contamination from the pentachlorophenol (PCP) dip vat and storage tank area was removed to meet a cleanup goal of 200 micrograms per kilogram (ug/kg) for total dioxins/furans. Based on this cleanup level, it

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

is unclear if contamination remains onsite that exceeds the current RSL for industrial soil of 0.022 ug/kg for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) equivalence.

- b. Section 8.2.2.1 also states that contamination was left onsite at concentrations that exceed 200 ug/kg. It is unclear if these data were considered in the current screening of dioxin/furan data.
- c. Section 8.2.2.1 indicates that soil with concentrations below the cleanup goal of 200 ug/kg was used as backfill. It is unclear if these data were considered in the current screening.
- d. The first paragraph on page 8-5 identifies maximum detected concentrations of several dioxins/furans in samples collected from Area 2 that were subsequently covered with gravel. It is unclear if these data were considered in the current screening of dioxin/furan data.
- e. Section 8.2.2.4, Conclusions, indicates that only surface soil data was evaluated as part of the current assessment. It is unclear why subsurface soil data were not evaluated.

Revise Section 8.0 to clarify the data set used in the updated assessment of dioxin/furan data, and provide rationale for the selected data set.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

Section 10.2 of the HHERA recommends sampling and additional risk assessment of PCP and dioxins/furans in soils on the Main Installation. A more detailed review of existing analytical data will be performed prior to developing a sampling plan. The review will include the issues raised in the above comments; the data review and the sampling plan will be provided in a QAPP submitted for EPA review.

- 9. The HHRA concludes that “most organic and inorganic constituents detected at the former Depot are present at levels that do not exceed current Industrial RSLs.” The basis for this conclusion is unclear. Review of Sections 8.3.1 through 8.3.6 indicates that polynuclear aromatic hydrocarbons (PAHs), pesticides, polychlorinated biphenyls (PCBs), dioxins, and metals are present in one or more FUs at concentrations that exceed applicable RSLs for industrial soil. Based on this, additional analysis is warranted to demonstrate that the remedy remains protective of an industrial worker. Revise the HHRA to provide this analysis.

**Response:** Additional evaluation of exceedances will be incorporated in an updated HHERA following additional data collection and risk assessment.

The phrase in text stating that “most...constituents are detected ...at levels that do not exceed current Industrial RSLs” indicates that some do, as noted in this comment. Review of Attachment F, Table 1 indicates that approximately 30-40% of the EPCs exceed a RSL. To further evaluate these exceedances, “screening” risks will be calculated by comparing the EPCs to the noncancer and cancer Industrial Soil RSLs in Attachment F, as shown below. The evaluation will be presented in the updated HHERA following additional data collection and risk assessment.

$$\text{Screening Risk} = \frac{EPC}{RSL_{\text{cancer}}} \times \text{Target Risk and}$$

$$\text{Screening Hazard} = \frac{EPC}{RSL_{\text{noncancer}}} \times \text{Target Hazard Quotient.}$$

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

10. Several issues were identified in review of Figure 4-1, Human Health Conceptual Site Model:

- a. Figure 4-1 does not identify the groundwater inhalation exposure pathway (e.g., inhalation of VOCs during showering) as complete for a future potential resident, as discussed in Section 4.2.2, Future On-Site Resident. Rather, it appears that the inhalation exposure pathway identified on Figure 4-1 is that associated with the vapor intrusion pathway. It is noted that the groundwater inhalation exposure pathway and vapor intrusion pathway should be listed separately on Figure 4-1.
- b. Figure 4-1 indicates that the vapor intrusion pathway was evaluated for a future potential resident; however, review of the HHRA indicates that this assessment was not completed.
- c. Figure 4-1 does not indicate that the groundwater inhalation exposure pathway was considered to be insignificant for an on-site worker, and was not evaluated in the HHRA, as discussed in Section 4.2.1, Current/Future On-site Worker.

Revise Figure 4-1 to address these issues.

**Response:** Figure 4-1 of the 2018 HHRA will be revised to list groundwater inhalation exposure and vapor intrusion pathways separately; and to indicate that the groundwater inhalation exposure pathway was considered insignificant for an on-site worker.

The VI pathway is presently considered to be incomplete based on depth to groundwater. Previous studies have indicated groundwater contamination beneath the MI should not present a VI risk based on site conditions; however, additional lines of evidence are needed to support the lack of a complete VI pathway. A VI study is currently being performed as a separate task. Soil gas samples were collected in August 2018. The VI analyses and risk assessment findings will be provided in a technical memorandum for regulatory agency review and will be incorporated in a later HHRA following additional data collection.

## **II. EPA HUMAN HEALTH RISK ASSESSMENT (HHRA) SPECIFIC COMMENTS**

### **1. Section 3.1.2, Data Usability, Page 3-2**

This section indicates that the detection limits for up to six VOCs (depending on the date of the data set) were greater than the applicable groundwater screening criteria (i.e., RSLs or the Maximum Contaminant Levels). Noting that the HHRA utilizes data from multiple years (2012-2017) and multiple aquifers, and that data sensitivity issues were not reported for all years, it is unclear if and how this impacted the selection of COPCs. Non-detect chemicals should be retained as COPCs in all instances when a detection limit exceeds the most relevant screening criterion to highlight data gaps and for the purposes of the public record. Revise the HHRA, as applicable, to ensure that non-detect chemicals are retained as COPCs in all instances when a detection limit exceeds the most relevant screening criterion (for every sample collected from a given contact medium), and include a qualitative evaluation of the non-detect COPCs and their influence on the risk assessment in the Uncertainty Analysis (e.g., degree to which the exceedance occurs, likelihood of the contaminant being present above a level capable of eliciting an adverse health effect, etc.). If elevated detection limits do not impact the selection of COPCs due to the availability of multiple data sets, clarify this condition.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

**Response:** An updated HHERA will be prepared following additional data collection and risk assessment. The Uncertainty section will provide a table comparing the detection limits to the minimum of the criteria used in the COPC screening, and information explaining the added uncertainties associated with inclusion of these non-detect chemicals and elevated detection limits.

Evaluating non-detected chemicals as COPCs adds uncertainty to the cumulative risks and noncancer hazards. As noted in RAGS Part A Section 5.3.5:

“Generally eliminate those chemicals that have not been detected in any samples of a particular medium. The outcome of this step is a data set that only contains chemicals for which positive data (i.e., analytical results for which measurable concentrations are reported) are available in at least one sample from each medium. Unless otherwise indicated, assume at this point in the evaluation of data that positive data to which no uncertainties are attached concerning either the assigned identity of the chemical or the reported concentration (i.e., data that are not "tentative," "uncertain," or "qualitative") are appropriate for use in the quantitative risk assessment.”

Further, the 2018 USEPA Region 4 HHRA Guidance does not indicate non-detect chemicals with elevated detection limits should be added as COPCs.

**2. Section 3.3, Identification of COPCs, Page 3-4**

Review of this section and Table 2.1, Occurrence, Distribution, and Selection of Human Health COPCs for Site-Wide Groundwater, indicates that contaminants detected in less than five percent of samples were eliminated as COPCs. This method of selection of COPCs is generally perceived as dated and was in use prior to the widespread and ready-availability of regulatory agency-promulgated health-based screening criteria (e.g., the RSLs). In developing a site-specific COPC list, any contaminant detected at a concentration in excess of the most relevant health-based screening criterion should be retained as a site COPC and evaluated quantitatively and/or qualitatively within the Risk Characterization section of the HHRA. This screening should be conducted irrespective of frequency of detection results for individual constituents. Revise the HHRA accordingly.

**Response:** An updated HHERA will be prepared following additional data collection and risk assessment. Contaminants detected in less than five percent of samples will not be eliminated from the COPC list.

**3. Section 4.4.1.2, Dermal Contact Pathway of Exposure, Page 4-5 and Section 4.4.1.3, Inhalation Pathway of Exposure, Page 4-6**

Two issues were identified in review of these sections:

- a. The first sentence of Section 4.4.1.2 indicates that it is assumed that risk/hazard attributable to dermal/inhalation exposures are equivalent to those attributable to ingestion exposures; however, the second sentence states that the risk/hazard estimates for dermal/inhalation exposures will be double that of the ingestion risk/hazard estimates.
- b. Review of the risk and hazard estimates in Attachment A-1, RAGS Part D Planning Tables 0 to 7.3B, indicates that risk and hazard estimates attributable to dermal



**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

exposures were generated for an industrial worker. This is not discussed in Section 4.4.1.2 and Section 4.4.1.3.

Revise these sections to clarify that it is assumed that risk/hazard attributable to dermal/inhalation exposures are equivalent to those attributable to ingestion exposures (not double), and that risk and hazard estimates attributable to dermal exposures were generated for an industrial worker.

**Response:** The referenced sections in the 2018 HHERA will be revised in accordance with the comment.

**4. Section 6.4.1, COC Summary by Aquifer and Receptor, Page 6-8**

The third paragraph in this section states, “The constituent 1,2,3-trichloropropane is an artifact of the EBT [enhanced bioremediation treatment] remedy and was detected in only eight wells within the TTA-2 TA [treatment area], with a detected range of 0.694 to 83.3 µg/L between 2012 and 2017. In April 2017, sampling indicated that 1,2,3-trichloropropane was detected in only four wells with a range of 0.694 to 15.9 µg/L.” The significance of these statements and/or the conclusions that can be drawn based on this information are unclear, as they are not discussed. Revise this section to clarify the significance of these statements and/or the conclusions that can be drawn based on this information.

**Response:** No change to the 2018 HHERA report is considered necessary for this comment.

1,2,3-trichloropropane had not been detected prior to the start of enhanced bioremediation treatment and has only been detected in one area (TTA-2) that was impacted by other solvents. Detection may result from being present as a production contaminant in these other solvents; however, if this has occurred, it is limited in scope. TCP will continue to be analyzed during site monitoring, with concentrations and trend analysis to be reported and the need for any remedial action evaluated.

**5. Section 8.1.2, Soils HHRA Methodology, Page 8-2**

The third paragraph on this page concludes that the methodology used in the 2000 HHRA was “relevant and appropriate.” No data or comparison of historical methodology to current methodology are provided to support this statement. For example, no comparison of risk assessment methodology, risk-based screening levels, exposure factor values, or toxicity values used in the 2000 HHRA to current risk assessment methodology, risk-based screening levels, exposure factor values, or toxicity values is presented. Revise the HHRA to provide a comparison of the historical methodology used in the 2000 HHRA to current methodology to support the conclusion that the methodology used in the 2000 HHRA was relevant and appropriate.

**Response:** No change to the 2018 HHERA report is considered necessary for this comment.

The results of the 2000 RA were compared to applicable requirements and criteria based on current guidance to present a forward looking assessment of protectiveness. As noted in Section 6.3.4 of the report, Comparison of Current Risks to the 2000 MI RI Risks, the groundwater component of the 2000 HHRA follows the same general risk methodology and uses the same primary USEPA guidance as the groundwater HHRA update. However, numerous changes in USEPA guidance since 2000 are noted. It is also noted in this section that these and other site-related changes can result in an increase or

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

decrease in the calculated risk for the COPCs. The HHRA update was performed to re-evaluate the risks to COPCs in the groundwater to help determine whether or not the remedy remains protective of the potential risks to receptors at DDMT. It is not a straightforward comparison between the 2000 and current risk estimates. See Section 6.3.4 for detailed information in this subject.

**6. Section 8.1.2, Soils HHRA Methodology, Page 8-2**

This section states that the methodology for assessing the toxicity of PAHs and dioxins/furans has changed since completion of the 2000 HHRA. While it appears that data for dioxins/furans was reassessed using current methodology in subsequent sections of Section 8.0, Review of 2000 Soils HHRA, it is unclear if PAH data were reassessed, as this is not discussed further in the HHRA. Revise this section to clarify if PAH data were reassessed, and provide supporting data tables. If they were not, provide rationale for absence of a supporting assessment.

**Response:** Section 8.1.2 in the 2018 HHRA will be revised to clarify that this reassessment was completed in Attachment F, Table 1. The PAHs were assessed by comparing data to current RSLs. The current RSLs incorporate the potency factors for PAHs.

**7. Section 8.2.1, Background Concentrations, Page 8-2**

This section states that background concentrations were calculated as part of the 2000 HHRA; however, it is unclear how the background data were used in the 2000 HHRA as this is not discussed. Revise this section to clarify how background data were used in the 2000 HHRA.

**Response:** Section 8.2.1 in the 2018 HHRA will be revised to clarify the use of background data. Background data is included as a criterion in Section 7.3 text and in the FU-specific COPC selection tables of the 2000 RI. However, no constituents were eliminated as COPCs based on background.

**8. Section 8.2.1, Background Concentrations, Page 8-3**

This section states, "Dioxins and furans were detected in most background soil samples, generally at higher concentrations at the surface than at depth and included octa- and hepta-isomers, indicating an atmospheric deposition source." The range of concentrations detected and the selected background concentrations are not discussed or evaluated. For clarity and completeness, revise this section to present the range of concentrations detected and the selected background concentrations.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

As noted in the response to General Comment #8, sampling and additional risk assessment of PCP and dioxins/furans on the MI is planned. A more detailed review of existing analytical data will be performed prior to developing a sampling plan. The data review and the sampling plan will be provided in a QAPP submitted for EPA review.

**9. Section 8.2.2.4, Conclusions, Page 8-7**

According to this section, "The maximum concentration in subsurface soils for TCDD

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

equivalents is reported as 13 µg/kg (MI RI Table 22-7); given that the range of other values for the UCLs [upper confidence limit] and EPCs in the 2000 MI RI is orders of magnitude lower, this is considered to be a typographical error.” The conclusion that this value is an error is not supported. A data review is not presented to support that this value is an error. In addition, the range of other values is unclear. Revise this discussion to provide additional data analysis to support the conclusion that this value is an error.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

Army agrees this error cannot be verified given the documentation available. This comment will be addressed during the additional review and data collection.

**10. Section 8.2.2.4, Conclusions, Page 8-7**

This section states, “There are no exceedances of human health screening levels [for dioxins/furans] in sediment, as there are no generic human health sediment criteria.” If industrial workers and/or future potential residents are expected to be exposed to sediment it may be appropriate to screen sediment data against the RSLs for industrial and/or residential soil. Revise this section to clarify which receptor populations are expected to be exposed to sediment, and present a screening of sediment data for dioxins/furans against the RSLs for industrial and/or residential soil. Alternatively, clarify why this is not necessary.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

The dioxins/furans sediment data will be reviewed against soil RSLs during the additional review. Text will be provided in the updated HHERA with additional details on potential exposure scenarios and a determination of the need for further screening.

**11. Section 8.2.2.4, Conclusions, Page 8-7**

This section indicates that concentrations of dioxins/furans detected in surface water “were compared to their respective state and USEPA water quality criteria....” No tables are presented to support this discussion. Therefore, the concentrations relative to the screening criteria are unclear. Revise this section to provide supporting surface water screening data tables.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

Surface water screening data tables with current state and USEPA water quality criteria will be provided following the additional review.

**12. Section 8.5, Conclusions, Page 8-12**

The last bulleted item on this page concludes that further investigation of arsenic in soil is not warranted as concentrations are “within the range of background concentrations,” although they exceed the RSL for industrial soil. Additional discussion is needed to support this conclusion. For example, this section does not discuss the range of detected arsenic concentrations compared to the range of site background concentrations. In addition, no evaluation as to

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHRA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

whether historical operations at the site could have contributed to arsenic contamination is presented. Revise the HHRA to provide additional data and discussion to support the conclusion that no further investigation of arsenic in soil is warranted.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

The available data for the range of detected arsenic concentrations compared to the range of site background concentrations and potential for arsenic contamination by historical operations at the site will be provided in the QAPP following the additional review.

**13. Section 8.5, Conclusions, Page 8-13**

The first bulleted item on this page states, "Other areas where dioxins/furans were detected but no LUCs were instituted may also require review and additional risk management decisions based on analytical results. This includes shallow and deeper soils within a portion of FU3 and FU4, as well as other media to ensure both human health and ecological risks are properly addressed." The areas to which this statement is referring are unclear, as no figures are provided that depict the locations of dioxin/furan exceedances and/or areas at which LUCs due to dioxin/furan contamination have been implemented or are required. In addition, it is unclear what other media are of concern. Revise the HHRA to address these issues.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

This comment, including preparation of figures showing sample locations for existing dioxins/furans data and the areas where associated LUCs were implemented, will be provided in the QAPP following the additional review.

**14. Section 8.5, Conclusions, Page 8-13**

The last bulleted item on this page states, "These restricted areas are largely co-located, as PCP use is a likely source of the dioxins in soil." It is unclear to what areas this statement is referring. Revise this statement to clarify this and provide a supporting figure.

**Response:** A more detailed review of existing analytical data will be performed; the data review and a sampling plan, if warranted, will be provided in a QAPP.

The requested figure will be provided in the QAPP following the additional review.

**15. Attachment A-1, RAGS Part D Planning Tables 0 to 7.3B, Table 1, Selection of Exposure Pathways.** Two issues were identified in review of this table:

- a. Section 4.2.2, Future On-Site Resident, indicates that the groundwater inhalation exposure pathway was quantitatively evaluated for a future potential resident, as does the "Rationale for Selection or Exclusion of Exposure Pathway" column of Table 1; however, the "Type of Evaluation" column of Table 1 indicates that this pathway was qualitatively evaluated.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

b. The “Rationale for Selection or Exclusion of Exposure Pathway” column of Table 1 states that the VI pathway was evaluated for a future potential resident; however, review of the HHRA indicates that this assessment was not completed.

Revise Table 1 to address these issues.

**Response:** Table 1 of the 2018 HHERA will be revised in accordance with comment 15.a.

Analytical results and risk assessment from the ongoing VI study will be incorporated in an updated HHERA following additional data collection and risk assessment. Comment 15.b will be addressed in the update.

16. **Attachment A-1, RAGS Part D Planning Tables 0 to 7.3B, Tables 3.1 through 3.3, Exposure Point Concentration Summary for Groundwater** These tables indicate that risk and hazard to a construction worker were evaluated in the HHRA; however, this is not the case. Revise these tables to remove reference to assessment of construction worker exposures.

**Response:** Tables 3.1-3.3 of the 2018 HHERA will be revised in accordance with the comment.

### **III. ECOLOGICAL RISK ASSESSMENT (ERA) GENERAL COMMENT:**

1. Based on review of the tables included in Appendix G, it is unclear why hazard quotients (HQs), especially for the chemicals of potential concern (COPCs) that exceed screening levels are not calculated. Revise the tables in Appendix G to calculate HQs for those COPCs that exceed their respective screening levels. This requested change will greatly facilitate the review process.

**Response:** The need for a SLERA will be evaluated and recommendations provided following additional sampling and risk assessment. Calculation of HQs for the ERA was outside the SOW for the 2018 HHERA.

### **IV. ECOLOGICAL RISK ASSESSMENT (ERA) SPECIFIC COMMENTS:**

**1. Section 9.2.3, Off-site Surface Water Transport, Page 9-5:**

The link to the Nonconnah Creek Watershed (08010211) of the Mississippi River Basin Water Quality Management Plan does not work and should be updated to include the following link: [https://www.tn.gov/content/dam/tn/environment/water/documents/wr-ws\\_watershed-plan-nonconnah-2002.pdf](https://www.tn.gov/content/dam/tn/environment/water/documents/wr-ws_watershed-plan-nonconnah-2002.pdf). Revise accordingly.

**Response:** The link will be updated in the 2018 HHERA.

**2. Section 9.2.3, Off-site Surface Water Transport, Page 9-5:**

The last paragraph in this section indicates that the potential transport of dioxin/furans warrants additional evaluation in accordance with the Tri-Service Environmental Risk Assessment Workgroup Questions/Answers on Dioxin (TSERAWQ, 2013). The link to TSERAWQ, 2013 is provided in Section 8.2.2.4, Conclusions, and Page 8-7 of the HH/ERA, but did not work.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

Revise the HH/ERA to include the appropriate link such that the applicability of the protocol for further ecological risk evaluation can be determined.

**Response:** The link will be updated in the 2018 HHERA.

**3. Section 9.4, Conclusions, Page 9-12:**

The first paragraph in this section indicates that the levels of certain COPCs in surface soil, sediment, and surface water collected in 2000 exceed the current March 2018 USEPA Region 4 ecological screening levels. However, because complete ecological exposure pathways are not present, on-site ecological risk at the Main Installation (MI) is considered minimal. While, this statement is accurate, select sections of the HH/ERA present contradictory information. For example, Section 9.3.3.2, Current Review Conclusions, Page 9-8 states, "HDR's review of the 2018 ecotoxicity criteria, detected COPC concentrations and site conditions support the general conclusion in the 2000 MI RI. However, further review is recommended for COPCs in soil that exceed current criteria, as described in Section 9.4." Therefore, it is unclear how COPCs that exceed current ecological screening levels will be evaluated. Revise Section 9 of the HH/ERA to clarify how COPCs that exceed screening levels will be evaluated.

**Response:** Text will be reviewed based on available information and inconsistencies will be eliminated in the 2018 HHERA revision.

Additional data collection and risk assessment for site contamination is planned, and an updated HHERA will be prepared. The need for a SLERA will be evaluated and recommendations provided in the updated HHERA.

**4. Figure 2-21, Conceptual Site Model for Potential Human and Ecological Exposures: Function Units 1-6, Memphis Depot Main Installation ROD:**

An apparent typographical error is present on Figure 2-21. For example, the last two blocks under "Secondary Source of Contamination" should be Onsite Surface Water and Onsite Sediment as opposed to Onsite Surface Soils and Onsite Subsurface Soils. Revise Figure 2-21 to address this typographical error.

**Response:** Figure 2-21 in the 2018 HHERA will be revised in accordance with the comment.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

**REVIEW OF ECOLOGICAL ASPECTS OF THE REVISION 0 HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT, MAIN INSTALLATION, DEFENSE DEPOT, MEMPHIS, TENNESSEE**

**From EPA Scientific Support Section, Sharon R. Thoms, June 18, 2018.**

*General Comments to RPM* on pages 1 to 6 provide a brief summary of site conditions and the SLERA review within the HHERA report. Responses to comments in this section are not considered necessary, with the exception of Item 2 on page 2, which states “The text described the BERA step as having begun, however, the document did not complete the elements of the BERA.” Army notes that the statement of work was limited to a review of the SLERA based on changes in applicable guidance since the time the original document was prepared. Army requests that the USEPA RPM forward any other comments in this section which require response.

**V. GENERAL COMMENTS TO DoD:**

1. Conclusions underemphasize chemicals exceeding ESVs and industrial RSLs at multiple FUs. Often the same chemicals that exceeded the industrial RSLs exceeded the ESVs. Please revise the document to include itemized data tables and figures for each FU showing the locations of exceedances of ESVs and industrial RSLs with respect to site features, land cover, land use, greenspaces, waterbodies, and footprints of removal actions.

**Response:** This comment will be addressed in the updated HHERA following additional data collection and risk assessment.

2. Figures showing the locations of surface water and sediment samples should be provided along with tables of itemized data.

**Response:** Updated figures to address this comment will be provided in the updated HHERA following additional data collection and risk assessment.

3. The 2018 Region 4 Supplemental Ecological Risk Assessment Guidance has narrowed the set of circumstances where a site can exit the ERA process after completing the SLERA to sites having buildings and parking lots with vegetation limited to grassy strips and sites where addressing human health risks will adequately address ecological risk concerns. The review has not addressed this aspect of the revised guidance. The screening level problem formulation is not of sufficient detail to support a discussion of potentially complete exposure pathways to various receptor groups, as this occurs in the BERA. The discussion of incomplete exposure pathways depends on how the land is being managed to exclude exposure to wildlife. If the property will be turned over to private use, the land use will likely change. It is uncertain whether the reduced use by wildlife will continue or whether land use controls are needed.

**Response:** The need for a SLERA will be evaluated and recommendations provided in the updated HHERA report. The assumption that future land use is likely to change may be inaccurate; it is more likely to remain industrial based on current and proposed activity, facility management plans and zoning.

**Responses to Comments from  
U.S. Environmental Protection Agency (EPA) Region 4 on:  
Human Health and Ecological Risk Assessment (HHERA), Revision 0  
Defense Depot Memphis, Tennessee  
Comments Received 23 July 2018  
Responses Revised 11 December 2018**

4. The ecological risk assessment review of the 2000 SLERA should contain an uncertainty section and discuss how sediment and surface water samples were available from drainage pathways leading from FU2 and FU4 but not from the other functional areas. Other limitations such as the age of the data should be discussed.

**Response:** The need for a SLERA will be evaluated and recommendations provided in the updated HHERA report.

5. The report recommended additional assessment of COPCs in soils exceeding the ecological criteria for their potential to serve as sources of contamination delivered by stormwater runoff to off-site surface water bodies. The exposure pathway to ecological receptors of soil contamination from the DDMT washing off into the off-site waterways is complete. Several chemicals detected in surface water exceeded TDEC standards for fish and aquatic life. Please estimate the total mass of CERCLA contaminants in each FU to evaluate whether there is a potential source to the waterways.

**Response:** The need for a SLERA will be evaluated and recommendations provided in the updated HHERA report.

The assumptions that the exposure pathway is complete and the site is a continuing source of runoff to surface water are in question and require further analysis. Estimating total mass of CERCLA contaminants to evaluate if there is a potential source to the waterways is not recommended, as noted in EPA guidance at [https://icis.zendesk.com/hc/en-us/article\\_attachments/202335086/ref10vcmaappendixa.pdf](https://icis.zendesk.com/hc/en-us/article_attachments/202335086/ref10vcmaappendixa.pdf).

## **VI. SPECIFIC COMMENTS TO DoD:**

1. Tables F-1 and G-1. The exposure point concentration for lead in FU3 in Table F-1 is 311 mg/kg, whereas the exposure point concentration for lead in FU3 in Table G-1 is 4,160 mg/kg. Please address this inconsistency.

**Response:** No change to the 2018 HHERA report is considered necessary for this comment.

Review of the original data in the 2000 MI RI, Table 18-1 indicates the range of detected concentrations for lead is 2.8 mg/kg to 4,150 mg/kg (value of 4,160 appears to be a typo in comment) and the arithmetic mean is 244 mg/kg. Table F-1 presents the 95% UCL data, which is the upper estimate of the true population mean. For the HHRA, applying the maximum detected concentration of 4,150 mg/kg in the COPC screening step and then applying the EPC (e.g., 95% UCL) in the risk calculations is standard national USEPA practice. In comparison, for the SLERA, only the maximum detected concentrations (i.e., 4,150 mg/kg) were used in the comparison for this screening assessment, which is standard practice and explains the difference in EPC values between the HHRA and SLERA. Applying 95% UCLs as an estimate of exposure is typically not done until Step 3A or in a full BERA.